Self-Care for Health in Rural Bangladesh

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Abstract

An interest in human coping applicable to endemic disease environments such as Bangladesh now includes disease mitigation and management through self-care. Although a frequently utilised treatment, research into the reasons behind self-care preference, types of self-care practised and the implications this has for individuals and communities in developing countries such as Bangladesh is lacking. This research therefore examines the adoption of self-care in Bangladesh and seeks to understand if it is an effective disease management strategy.

A mixed methods approach was employed, targeting a representative sample of different gender, age and socioeconomic status across three locations. 630 questionnaires, 47 semi-structured interviews, 15 focus group discussions, 20 key informant interviews and a series of participatory research tools were applied to explore how and why people use self-care. Data were also used to identify behaviours indicative of appropriate and inappropriate self-care that are beneficial or detrimental to the individual.

A detailed and complex picture of self-care emerged. It is widely used to prevent and respond to illness through traditional, herbal and modern pharmaceutical actions. Common illnesses and endemic diseases such as fever and diarrhoeal diseases were most frequently treated through self-care. A declining natural resource base, a hazardous flood environment and communication breakdown between doctors and patients can restrict self-care adoption. However, economic savings on healthcare expenditure, reduced opportunity costs and the means to preserve dignity represented positive aspects of self-care amongst participants. Examination of these factors demonstrated the failings of current health service provision as well as the potential for better self-care integration into existing healthcare approaches.

Wider lessons for disease management were therefore derived from self-care including the importance of low cost manifold strategies and the value of local knowledge and ownership. It is concluded that although self-care is not a panacea for the burden of ill health there is evidence to suggest it can play a crucial role in coping with the insurmountable disease risks people face in Bangladesh. In doing so the research contributes to understanding self-care in developing countries as an integrated and integral component of the primary health care system and infectious disease risk reduction more widely.

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List of Abbreviations and Acronyms

BHMS	Bachelor in Homeopathic Medicine and Surgery
BIDS	Bangladesh Institute for Development Studies
BMA	Bangladesh Medical Association
BRAC	Bangladesh Rural Advancement Committee
CFPR	Challenging the Frontiers of Poverty Reduction
CHW	Community Health Worker
DALY	Disability Adjusted Life Years
DFID	Department for International Development
DFID-B	Department for International Development Bangladesh
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GHW	Global Health Watch
GOB	Government of Bangladesh
GSC	Gram Shayhak Committee
HFA	Hyogo Framework for Action
HSB	Health Seeking Behaviour
ICDDRB	International Centre for Diarrhoeal Disease Research Bangladesh
IDRM	Infectious Disease Risk Management
MBBS	Bachelor of Medicine/Bachelor of Surgery
MDG	Millennium Development Goals
MOHFW	Ministry of Health and Family Welfare
NGO	Non-Governmental Organisation
NHS	National Health Service

ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
OTC	Over-the-Counter Medications
PHC	Primary Health Care
PRA	Participatory Rural Appraisal
SPHC	Selective Primary Health Care
SS	Shastho Shebika
TK	Taka
THC	Thana Health Complex
TUP	The Ultra Poor
WATSAN	Water and Sanitation
WCDR	World Conference on Disaster Reduction
WHO	World Health Organisation

List of Bangla Terms

Algaa, algaabatash	evil spirit or evil air
Algaa kaldrisiti	evil spirits, evil eye or evil air
Apa	sister
Bari	literally meaning home, but normally consisting of several households based on kinship relations and/or livelihood activities
Bashok pata	Leaf used to treat colds and coughs
Bazaar	permanent market and shopping area
Bhai	brother
Bichi kola	Type of banana containing large seeds
Biker	dysentery
Boddeu	traditional healer
Boro daktar	expert doctor, MBBS fully qualified allopathic doctor
Chirar Ghol	drink used to treat diarrhoea, predominantly made from water soaked in fried and flattened rice
Chula	level of household representing its members who eat from the same hearth or fireplace
Dai	midwife, usually a trained medical practitioner
Dactari porikha	medical test
Darida	poor, poverty
Deber Pani	green coconut water
Fakir	faith healer
Flagyl	antibiotic
Gorib	poor
Ghor	hut or home in which the nuclear family sleeps and keeps its belongings
Gushti	patrilineal family

Haat	market which usually sits once a week to sell fresh vegetables, fish and meat
Hujur	religious preacher or healer
Hydor	type of bad spirit
Jah fuk	blowing a blessing, either spiritual or religious
Joteder	large landowner
Kabiraj	herbal healer
Kantha	traditional Bengali quilt
Katchakola	Type of banana
Lajja	dignity
Lobon gur	salt
Lota pata	gathering of leaves used in herbal remedies
Malik	male household head
Mouri	pulped rice
Neejer Chekessa	self-care (using medicines oneself)
Neejer jotno	self-care (keeping clean)
Nijer shastho rokkhar babostha	self-care (maintaining good health)
Obhab	poverty
Paikhana	diarrhoea
Palli Chikitshok	village doctor
Pani pora	blessed water
Paribar	individual household
Pir	philosophical spiritual healer
Prathomic chikitsha	primary treatment
Purdah	a set of practices limiting women's public role, e.g. gender segregation, veiling and constraints on women's mobility and public interaction

Quack	unqualified drug vendor, may also engage in symptom diagnosis
Samaj	literally meaning society, also a term used for village level institutions of political and social authority
Shushto thakar jotno babostha	self-care (keeping oneself healthy)
Shustho thakar bebusta	self-care (keeping oneself healthy)
Tabiz	amulets
Taka	unit of currency
Tel poura	blessed oil
Tola oushudh	herbal medicine
Touba, Tabish	religious verse
Tulshi Guchh	basil plant, used in the treatment of diarrhoea
Tuk-tuk Daktar	Less qualified doctor, those with either little or no formal training
Union	administrative unit below an Upazila
Upazila	administrative unit between district and village level, formerly known as a Thana

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"There are no little people in this book. They are as big as you are, whoever you are."
(Joseph Mitchel, McSorley's Wonderful Saloon)

I want to begin with the most important acknowledgement and thanks to all the participants and members of the villages I visited in Bangladesh to undertake this work. The hospitality, kindness and generosity with their time allowed me to learn and gain insight into the issues addressed within this thesis. Without their willing participation and engaging insight into aspects of self-care, ill health, and health seeking behaviour this thesis would not have been possible. It is hoped this research may one day have some beneficial impact for these people whose honesty, dignity and resilience in the face of adverse circumstances was humbling throughout the time I spent in their company. Joseph Mitchel's statement above holds great resonance at this juncture.

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Ross Edgeworth, Newcastle-upon-Tyne, UK, (September, 2010)

Dedication

My father, my light, my guide, my hero, my great love passed away. He was one of a kind.

Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work.

Name:

Signature:

Date:

CHAPTER 1: INTRODUCTION

"However secure and well regulated life may become, bacteria, Protozoa, viruses, infected fleas, lice, ticks, mosquitoes, and bed bugs will always lurk in the shadows ready to pounce when neglect, poverty, famine or war lets down the defences. And even in normal times they prey on the weak, the very young and the very old, living along with us, in mysterious obscurity waiting their opportunities."
(Zinsser, quoted in Farmer, 2001 p. 37)

1.1 Background

Health is a fundamental human right and among the basic capabilities that gives value and justice to life (Sen, 1999). However, as disparities in the impact and incidence of disease[1] reveal a higher burden upon impoverished households the need to address areas of coping with ill health remains a pertinent issue (OECD, 2003; Bates et al, 2004 a/b; WHO, 2004). Policy attempts to address issues of equity such as Primary Health Care (PHC) (WHO, 1978) have often been compounded by the failure of health systems to deliver effective and equitable service to the poor throughout many areas of the developing world (Cockcroft et al, 2004; WHO, 2008). Consequently an interest in human coping and resilience applicable to endemic disease environments such as Bangladesh is beginning to turn towards disease mitigation and management through self-care, which has been identified by the WHO as a primary public health resource within the healthcare system (WHO, 2000a). This is reinforced by acknowledgement that provision of medical services alone is insufficient to reduce disparities in health (Ahmed et al, 2000), while delivery system sustainability comes from recognition of local level coping strategies and resilience (Adams et al, 1998). Furthermore, the importance of people centred risk reduction of infectious disease is implied in policy agendas such as the Hyogo Framework (WCDR, 2005). Although defined as a behaviour in which people function on their own behalf in the prevention and detection of disease, definitive ideas concerning the influences on self-care adoption are not well documented for developing country contexts. Immediate and wider implications remain unknown in terms of how it may be facilitated to the benefit of sick individuals, the extent of choice behind self-care selection, its use as a cost effective management

[1] Disease refers to disorders in the function of organs or organ systems based on biomedical concepts and excluding cultural meaning, social and psychological dimensions. Illness refers to the patient's experience of the disease and is influenced by cultural, social and individual personal factors (Christiakis et al, 1994; Helman, 2007). This distinction holds importance in terms of research into health as the experience of illness is more likely to induce healthcare consultation as opposed to the biomedical nature of disease (Ahmed, 2005).

strategy and potential integration as a low cost component of health delivery systems in some of the poorest countries.

This thesis thus aims to critically examine self-care for health in Bangladesh and refine the debate surrounding self-care as a disease management strategy. In doing so, key factors that are indicative of safe and appropriate forms of self-care are identified, while indicative forms of inappropriate self-care are isolated. Drawing on these areas of investigation a series of lessons are elucidated to address how self-care can be more widely applied as a disease risk management approach to community based disaster risk reduction and policy. Therefore as well as contributing to limited literature examining self-care in developing countries, the research also seeks to add to emerging literature in health focussed coping strategies. The originality of this research stems from the unprecedented attempt to document types of self-care, understand determinants in self-care implementation and assess the implications self-care practice has for the individual, household and wider healthcare system in a developing country context. This study also provides a rich description of the impediments to self-care adoption in Bangladesh, but the primary contribution of this work resides in explicating how self-care can be effectively used as a disease management strategy.

The study was designed within the framework of Northumbria University doctorate guidelines but took place within a wider research programme examining poverty, disaster risk reduction and health security in Bangladesh. Working within a wider research programme facilitated certain aspects of the research process that are discussed further in Chapter 4. However, the design, implementation and aims of this study drew on a culmination of the author's professional and academic experience. These experiences include health and development research within the developing world, with emphasis on health seeking behaviour in parts of rural Bangladesh. As a research officer at a local Bangladesh Non-Governmental Organisation (NGO) in 2004 and a research consultant working in Bangladesh in 2005 the author gained an insight into some of the issues within health, development and specifically the concept of self-care. Combined with academic studies in 2004 and continuing professional involvement within international health and development programmes, an ongoing interest and engagement was formed with many of the issues covered in this study. In accordance with calls for researchers to 'write themselves into the research' (Rose, 1997) the author's background and positionality are considered further in Chapter 4.

1.2 The Burden of Ill Health

The many ways poverty and illness interact infers that health problems are deeply rooted in the socio-economic development of a society (Sen, 1997; Marmont, 1998; Gwatkin, et al, 1999; Bloom & Lucas 1999; DfID, 2000; Wagstaff, 2002; Currat 2002). This is emphasised by the higher levels of morbidity and mortality rates among middle and lower income countries (Murray and Lopez, 1997; Black et al, 2003; UNICEF, 2003; Lopez et al, 2006). Evidence suggests ill health is both a cause and effect of poverty (World Bank, 1993; DFID, 1997; Sen, 1997; Subramanian et al, 2002; Wagstaff, 2002). Differences in vulnerability between groups of people to ill health can affect the welfare of both the individuals concerned and the households to which they belong. The costs of illness can undermine livelihoods through loss of income and depletion of assets and savings, which contributes to impoverishment (Fabricant, 1999; Meesen et al, 2003; Sen, 2003; Russell, 2004). In turn, poverty can affect health by reducing life expectancy and productivity while creating social exclusion (Skold, 1998; OECD, 2003). Poverty can detrimentally affect levels of nutrition, access to health care and perhaps most importantly, create a self-reinforcing vicious cycle in which poverty breeds ill health and ill health keeps impoverished people poor (Narayan et al, 2000; World Bank, 2000a; Currat, 2002; Hulme, 2003; OECD, 2003). To this extent, poverty itself is an extremely tenacious disease (Melrose, 1982).

Given these circumstances it is perhaps not surprising that a number of studies have highlighted that impoverished households identify health risks as the greatest threat to their lives and livelihoods (Sen, 1997; Narayan et al, 2000; Segall et al, 2002; Hulme, 2003; Falkingham, 2004; Krishna, 2004; Nopen & Kantor, 2004; Russell, 2004). Poor households have a greater dependency on a healthy body and physical ability to provide and sustain livelihoods (World Bank, 2001), a point saliently expressed by Chambers (1989); "The main asset of most poor people is their body…the plain fact that the poorer people are the more it matters to be able to work and earn, the more they depend on physical work, and the higher are the personal costs of physical disability" (p.4).

The regressive cost burdens of illness directed towards the poor are further accentuated by economic costs associated with health care access. Health systems regularly impose direct costs through user fees, medical costs and purchase of medications (Fabricant et al, 1999; Russell, 2005; McIntyre, 2006). Although the poor in general spend less on

treatment in comparison to other economic groups due to lack of access, inability to pay and a range of opportunity costs, this spending makes up a higher proportion of their income. Even minor illness costs can exceed household budgets of the poor who often survive on a wage that barely covers minimum food requirements (Russell, 2003; Sen, 2003). Therefore engagement with the health system can constitute a 'poverty trap' in which poverty becomes induced by medicine. This is referred to as 'iatrogenic poverty' which is rapidly becoming a major concern for the international public health community (Meesen et al, 2003). It is also a driving force in increasing levels of poverty amongst households affected by illness in Bangladesh (Hulme, 2003).

1.3 The Geographical Focus of the Research

Bangladesh has been severely affected by the burden of disease. Although certain advances have been made since the country achieved independence in 1971, preventable infectious and poverty related diseases dominate the top ten causes of morbidity (Table 1.1). Approximately 380,000 children under five die every year from pneumonia, diarrhoea, measles and neonatal tetanus (Baqui et al, 1998) while high levels of morbidity affects up to one fifth of the population (Ahmed, 2005). These statistics clearly reflect the need for a continued focus upon infectious disease in terms of assessing methods of coping and providing the means to facilitate effective disease prevention and response for impoverished households in Bangladesh.

Table 1.1 Top 10 Causes of Morbidity in Bangladesh, 2000

Rank	Disease/illness	Male (%)	Female (%)
1	Fever with cold/cough	23.5	25.6
2	Fever (Unknown origin)	14.1	14
3	Peptic ulcer	8.1	8
4	Diarrhoea	5	5.3
5	Blood dysentery	3.1	3.8
6	Bronchial asthma	2.7	2.9
7	Arthritis	2.5	2.3
8	Hypertension	2.5	2.1
9	Waist pain	2.4	1.9
10	Scabies	1.9	2.1

Source (BBS, 2005)

The perpetuation of these problems within Bangladesh and the country's relatively poor health record in comparison to other developing countries in South Asia (World Bank, 2002; UNDP, 2003) makes health and population among the most important

development issues for both public and private sector organisations. It is also a pertinent reason to address continuing problems within the health sector to research and identify systems, interventions and policy to alleviate the burden of ill health for the impoverished and most disadvantaged populations of the country. Within this context, the re-examination of ongoing enteric disease causation, transmission and response remains in high demand.

This is particularly applicable in the case of diarrhoeal diseases (Box 1.1) which remain the second largest cause of childhood mortality and morbidity in the developing world, accounting for 2.5 million deaths per year (21% of all mortality) in children less than five years of age year (Kosek et al, 2003). This is more deaths amongst children than those caused by AIDS, measles and malaria combined (UNICEF & WHO, 2009). Diarrhoeal disease inflicted 3.8 percent of global deaths (ranked 8th) and 4.2 percent of disability adjusted life years (DALYs)[2] in 2000 (WHO, 2001), with the number of recorded cases rising in absolute terms by 0.62 percent between 1990 and 2000 (WHO 2001). It is the second highest cause of under-five deaths globally (WaterAid, 2009) and has at times represented the most significant health risk for numerous developing countries (Guerrant et al, 2002). This situation is replicated in Bangladesh where mortality and morbidity rates for diarrhoeal diseases are 6.9 percent and 17.2 percent respectively in some districts (BBS, 2005; Adjuik & Smith, 2006). It is the third highest cause of ill health in the country when diarrhoea and blood dysentery rates are combined[3] (Table 1.1) (BBS, 2005). The severity and highly infectious nature of diarrhoeal diseases combined with difficulties of prevention within impoverished populations result in 110,000 deaths and 75 million episodes per year. In response, the government of Bangladesh spends $80 million per year for treatment alone (Islam et al, 2007). Although diarrhoea and dysentery remain endemic diseases of poverty, reflected in patterns of incidence related to physical environments and impoverished and overcrowded living conditions (Guerrant et al, 2002; EHP et al, 2004). There is evidence to suggest that local level coping strategies are applied to minimise the impact of diarrhoeal diseases, particularly within the context of Bangladesh (Ahmed et al,

[2] DALY is a measurement used to calculate potential years lost due to premature death. This concept includes years of healthy life lost as a result of individuals suffering ill health or being in a state of disability (Lopez et al, 2006).

[3] Within this study both diarrhoea and blood dysentery constitutes the term diarrhoeal disease. The inclusion of these two types of diarrhoeal disease is based on WHO classification of the two main clinical types of diarrhoea: 1) acute watery diarrhoea that can last several hours or days, 2) acute bloody diarrhoea also referred to as dysentery (WHO, 2010). The distinction between types of diarrhoea is also described within Chapter 4.

2003). Additionally, several recommended diarrhoea prevention strategies such as breast feeding, hygiene practises, oral rehydration and adequate nutrition (UNICEF & WHO, 2009) are measures that can be addressed within the household by the patient. It is for these reasons that a specific focus is placed upon diarrhoeal disease within this study.

Box 1.1 Diarrhoeal Disease

There are approximately four billion cases of diarrhoea each year resulting in 5-7 million deaths (Guerrant et al 2002), including 2.5 million in children under five (Koesk et al, 2003). Diarrhoeal diseases are caused by more than a hundred different bacteria, protozoa or viruses which attack the small intestines causing it to malfunction and disgorge its contents in water or bloody stools. This causes the rapid depletion of water and sodium in the body which creates dehydration damaging the salt balance, invariably leading to death if more than 10% of fluid loss occurs without any replacement (Water Aid, 2009).

Diarrhoeal diseases thrive in conditions of poverty as they are exacerbated and spread through unsafe water, inadequate sanitation, poor domestic and environmental hygiene, housing and nutrition. Major diarrhoeal diseases include dysentery, amoebic dysentery, rotavirus, giardia, shigellosis, typhoid, bacillary dysentery and cholera. The latter three have been identified as the most deadly forms of diarrhoea (Water Aid, 2009). There is a distinction between rapid onset conditions such as cholera and dysentery that bring dehydration and death within days if not treated with an antibacterial agent and slower onset conditions from which people generally recover with minimal diarrhoeal medication. All types of diarrhoeal disease, whether life threatening or not, benefit from rehydration therapies (Bhattacharya, 2003).

Many other conditions cause diarrhoea as a secondary symptom, such as malaria, dengue and nutritional illnesses. Malnourished children are particularly at risk becoming weaker and more malnourished as the diarrhoeal disease progresses (Water Aid, 2009). Other factors which can increase the risk of diarrhoea include low socio-economic status (Emch, 1999; Hussain & Smith, 1999; Yeager et al, 1999), low maternal education and illiteracy (Mujumder & Islam, 1993; Islam et al, 1994; Borooah, 2004), malnutrition and vitamin A deficiency (Bhuyia et al, 1989), low birth weight, age of the child (Zodpey et al, 1998) and restricted access to health care facilities (Hussain & Smith, 1999).

A high proportion of the Bangladesh population are exposed to polluted water through faecal contamination. Either through the lack of, or non-utilisation of, sanitation facilities contamination is quickly spread through the multiple uses of water in the Bangladeshi context, facilitating the transmission of diarrhoeal pathogens (Alam, 1995; Myaux et al, 1997). Although many Bangladeshis are aware of this transmission route a number of cultural explanations surrounding the origin, transmission and treatment of diarrhoea co-exist (Weiss, 1988, Helman, 2007). More recently, research has documented poor knowledge concerning required treatment procedures in the event of increasing diarrhoeal illness severity (Zaman et al, 2004).

1.4 The Role of Self-Care

People are not passive observers of events that unfold around them; they adjust to shocks such as those caused by illness through 'coping strategies' and human agency orientated to reducing risk. Some evidence suggests collective resilience and coping to solve public health issues in the face of epidemics (Macfarlane et al, 2000), thus enabling minimal survival, sustenance (Davies, 1993) or primary subsistence (Collins, 1998). In the event of such stresses, households seek to cope by deploying their assets to best effect (Swift, 1989; Devereux, 1993; Moser, 1998; Soussan, et al, 2002; DfID, 2003). In health-related research, coping mechanisms can be defined as strategies ''adopted by family members, friends and colleagues to minimise the effects of an illness on the welfare of all concerned'' (Chima, Goodman, & Mills, 2003, p. 27). Substantial research has been undertaken into coping strategies (Corbett, 1988; Webb, 1993; Davies, 1996; Gray, 2002), but the majority focuses on responses to drought events rather than ill health.

Research that has examined coping strategies more specifically in the health domain has identified the growing preference for self-care practices adopted in response to ill health. Although considerable research has been undertaken in the developed world (Cunningham-Burley & Irvine, 1987; Nyhilin, 1991; Dill et al, 1995; Faulkner, 1996; Russell et al, 1997; Sowell et al, 1997; Berman & Iris, 1998; Rogers & Hay, 1998) more recent research stems from developing country contexts (Howlader & Bhuiyan, 1999; Leyva-Flores et al, 2001; Bhatia & Cleland, 2001; Ahmed et al, 2003; Zaman, et al, 2004, Ahmed et al, 2006; Edgeworth & Collins, 2006). Self-care during illness is a ubiquitous and historical practice (Dean, 1981) often defined as people functioning on their own behalf in the prevention and detection of disease. It can involve self-diagnosis; use of old medications or remedies within the home and the purchase of medications without medical advice (Levin, 1981; Kickbush, 1989; Hardon et al, 1994; Tipping & Segal, 1995; Ahmed et al, 2003; Meetoo & Temple, 2003). The widespread use of ORS is a strong example of a low cost, self-managed treatment that can be highly effective in the treatment of diarrhoeal disease (Victoria et al, 2000). Self-care has been identified and accepted as a primary public health resource within the health care system (WHO, 2000a), although it can involve risks in terms of incorrect diagnosis, irrational use of drugs and lack of knowledge concerning alternative treatment options (Abosede, 1984; Chang & Trivedi, 2003; Ahmed et al, 2006). However difficulties arise

in drawing on comparative analysis concerning the scope of self-care due to the variations in definitions and methods of study applied to the concept.

Despite these discrepancies, research does consistently indicate this health behaviour to be the predominant form of health care within the developing world in which estimates state between sixty to ninety per cent of all cases of health care is self-care involving no professional medical intervention (Dean, 1981; Mechanic, 1983; Dean, 1989b; Hardon et al, 1994; Phillips & Verhasselt, 2001). The predominance of this practice is particularly apparent in Bangladesh (World Bank, 2003; Cockcroft et al, 2004; Ahmed, 2005), with some research documenting a 35 percent increase in self-treatment among the rural poor over a five year period (Ahmed et al, 2003). Given these statistics on self-care utilisation, it is perhaps surprising that the subject matter appears to be under researched in developing country contexts. This means there is a lack of data to analyse the underlying causes behind this consistent health behaviour preference, which would assist in policy and programme development. Hardon et al (1994) reinforce this point by identifying the relative lack of studies that have examined self-care from the individual's perspective in order to explore their criteria for self-care selection. This is a factor which is lacking in the light of the contribution lay users can make to better understanding self-care (WHO, 2009). The fact that the majority of studies on this subject matter are quantitative in nature implies that the depth of examination on the type and process of self-care adoption, the determinants of self-care use, the facilitating and prohibitive factors surrounding self-care uptake and the extent of patient choice, if in fact any choice exists, requires greater attention.

Studies that do examine the underlying forces behind this rise in self-treatment speculate over the growing cost of health care (Pagan et al, 2006), recognition by individuals and households of the limits to healing that formal medical care produces in the event of certain diseases (WHO, 2000a; Pagan et al, 2006), or increasing knowledge of how to treat illness (Leyva-Flores et al, 2001; Ahmed et al, 2003). Previous explanations for the continuing rise in self-care and the utilisation of home remedies in Bangladesh identify the availability of free medications such as ORS and water purification tablets introduced through various NGO health development programmes. Additionally, the extensive preventative health education and patient empowerment messages promoted by numerous NGOs, which serve to increase local capacity to

recognise, diagnose and undertake self-treatment of particular illnesses is deemed to be influential (Ahmed et al, 2003). Other research has indicated implementation of self-care as a coping strategy can be affected by financial and time constraints, access to health care, cultural rationality and access to social networks (Muela et al, 2003; Ahmed 2005; Edgeworth & Collins, 2006; Pagan et al, 2006). These studies also highlight the process of selecting self-care, or forced adoption of self-care, as not just a one off isolated event but the result of emergent and integrated factors. Yet the challenge remains to adequately support self-care as an effective, low cost means of disease prevention and control and if appropriate an integrated component of the primary health care system. All of these issues are discussed in greater detail in the following chapter in which the concept of self-care is 'deconstructed' for the purposes of assessment in line with the objectives of this thesis. However, at this juncture the main rationale of the research is restated and explicated, along with the main aims, objectives and key research questions.

1.5 Rationale, Aims and Objectives

As outlined at the beginning of the chapter, this research aims to critically examine self-care for health and refine the debate surrounding the use of self-care as an effective disease management strategy. Despite a limited degree of literature focussing on self-care in developing countries, some recent research has identified the existing predominance of self-care in some developing countries (Leyva-Flores et al, 2000; Bhuyan, 2004; Pagan et al, 2006), particularly Bangladesh (Cockcroft et al, 2004; Ahmed, 2005) and the possibility of its increasing prevalence in that country (Ahmed et al, 2003). Further studies suggest health systems are frequently ineffective in reaching the poor, at times even imposing regressive cost burdens on impoverished households (Fabricant et al, 1999; Kabir et al, 2000; Hulme, 2003; Sen, 2003). Meanwhile recent international policy developments accompanying the emergence of current disaster risk reduction paradigms have strongly indicated renewed interest in human coping and resilience applicable to a wider set of disaster types, including epidemic and endemic disease environments. These developments are reflected in the Hyogo Framework for Action (HFA) released at the World Conference on Disaster Reduction, Kobe, Japan (WCDR, 2005)[4]. The framework outlined the fundamental mechanisms in disaster

[4] The World Conference on Disaster Reduction (2005) promoted strategic and systematic approaches to reduce vulnerabilities and risks to hazards.

reduction, including health, through key activities in environmental and natural resource management; social and economic development practices and local level empowerment to enable risk reduction and resilience building to take place. Within this context, self-care could be an important component in facilitating this knowledge and education to build or enhance resilience to disease. Self-care could also contribute to the Third and Fourth Priority Actions of the HFA by documenting indigenous knowledge and identifying areas where people's capacities can be supported and enhanced.

Concomitantly, renewed focus upon PHC philosophy and objectives (WHO, 2008) reiterates the involvement of individuals and the community in the acquisition of improved health through their own efforts and initiatives (Rahman, 2000). There is potential synergy between essential components within the PHC approach such as self-reliance, community participation and equity, with aspects of self-care. Within this context, improved understanding of self-care could identify potential avenues for any transfer of health care provision from service delivery towards community based initiatives.

However, there remains a lack of research specifically addressing disease management within contexts of high incidence of enteric disease and definitive ideas concerning the influences on self-care adoption. Additionally, the inequitable nature of access to health systems raises questions on the uptake of self-care practices and its potential integration as a low cost component of health care that has potentially poverty alleviating effects. It is therefore imperative to understand the adoption of self-care and the implications associated with its uptake (Dean, 1981; Abosede, 1984; WHO, 2000a; Chang & Trivedi, 2003). The immediate and wider implications from this health behaviour in terms of more cost effective intervention strategies remain unknown. There is a need to question under what circumstances the decision to self-treat will be beneficial for the health and livelihood of the sick individual to know how best it may or may not be facilitated. This is particularly salient amongst the poor of Bangladesh where high illiteracy rates and widespread availability of unlicensed health practitioners can create an environment where self-care is neither safe nor appropriate (Ahmed et al, 2006). In the current policy environment of community participation and empowerment in PHC and in mitigating health disasters, it will also be important to assess how self-care can be used to its full potential to benefit both sick individuals and provide wider impacts on the health care system in the resource poor context of Bangladesh.

Within this context the research therefore aims to contribute towards these issues and literature by critically examining the adoption of self-care for health in Bangladesh, with specific reference to diarrhoeal disease. By addressing this area of coping with ill health and environmental disease this thesis will seek to refine the debate surrounding safe and appropriate self-care and implications for disease management. In particular the determinants, driving forces and prohibitive factors in self-care adoption will be reviewed alongside participants understanding of self-treatment and the implications this type of disease management strategy has upon the patient, household and wider health system.

Given this context and the aims of the thesis, the research objectives are to:

- Examine the adoption of self-care as a disease management strategy in the event of illness, with specific reference to diarrhoeal disease

- Identify what is indicative of appropriate and inappropriate forms of self-care adopted in the event of illness, with specific reference to diarrhoeal disease

- Determine what lessons can be drawn from the adoption of self-care as a disease risk management approach and how these can be more widely applied to community based infectious disease risk reduction and policy

1.6 Thesis Outline

Chapter 2 examines existing self-care literature to provide an in-depth deconstruction of self-care, the core concept covered in this thesis. It outlines previous research that has examined self-care focussing on definitions, critiques, types of self-treatment and levels of appropriate practice. The chapter draws together divergent forms of self-care explanation in order to establish some conceptual clarity and reconstruct the notion of self-care for disease management in the specific context of Bangladesh.

Chapter 3 provides a contextual backdrop for self-care adoption by discussing the local milieu in which self-care takes place in relation to the disease environment, healthcare

choices and the wider cultural and socioeconomic situation. Details regarding national and local, formal and informal healthcare providers are outlined in addition to specific details on the three field site locations in Bangladesh where research for this thesis was conducted.

Chapter 4 describes the different methods used in this study including an overview of the methodological approach, ethical considerations, research limitations, and data analysis strategies. The chapter suggests that because a major goal of self-care research is to understand how differing social variables and personal characteristics interact to influence behaviour, a mixed methods approach is best suited to achieving this purpose. The qualitative and quantitative methods used within the approach to assess the adoption of self-care are therefore outlined. The chapter also discusses methodological challenges and critiques of the research process as well as issues of ethics, researcher positionality and the complexities of conducting research in rural Bangladesh.

Chapter 5 is based on empirically derived primary research highlighting the meaning of self-care through local terminology, the identification of household self-care practises and the levels of self-care use in rural Bangladesh. Self-care methods are also analysed through biomedical assessments with locally practising qualified health practitioners to establish levels of safety, efficacy and appropriateness.

Chapter 6 uses empirically derived data to explore the range of determinants that can play a role in influencing whether self-care is utilised. This commences with demographic factors such as gender, age, levels of education, location and socioeconomic status. The chapter also explores other factors that can either facilitate or prohibit self-care adoption such as natural resources, the impact of flooding and cost-effectiveness of certain self-care methods.

Chapter 7 discusses the key findings presented in chapters five and six in relation to the existing self-care literature and conceptual ideas previously covered in chapters two and three. In doing so, the implications of self-care for the individual, household and the healthcare system come to light. This discussion also addresses both the threats and opportunities for continued self-care utilisation amongst the rural poor.

Chapter 8 concludes this research, summarising the findings and reiterating the key points elaborated in the previous chapter to elucidate what lessons can be learnt for the

future use of self-care as a disease management strategy within disease endemic environments. The chapter puts forward a number of policy recommendations for self-care promotion and support, as well as identifying areas for further research.

CHAPTER 2: DECONSTRUCTING SELF-CARE

"If health does not start with individuals, the home, the family, the working place and the schools, then we will never get to the goal of health for all. Even if we take the example of industrialised countries, self-care, self responsibility, self coping in the individual family and community represent 50-60% of all care."
(Mahler, quoted in Abosede 1984, p. 702)

2.1 Introduction

This chapter explores self-care, the core concept covered in this thesis. Research that attempts to examine the adoption of self-care within both industrialised and developing country contexts must clearly identify and understand the features that constitute self-care. However, the nature and extent of self-care practices are not widely understood, particularly within a developing world context such as Bangladesh. Therefore, definitions, types of self-care and who undertakes self-care are initially considered. Key questions surround levels of appropriate and inappropriate self-care. Assessments and critiques of self-care adoption are also discussed in terms of their relevance to disease management in the developing world context. Divergent forms and explanations for self-care are drawn together to establish some conceptual clarity and re-construct the notion of self-care for disease management in the specific context of Bangladesh.

The notion of individuals taking greater responsibility and action for their own health has gained increasing acceptance from the health profession in recent years (Erwin et al, 1996; Bradley et al, 1998; Stevenson et al, 2003). Evidence suggests this is not a new trend as several studies from the 1970's indicated that the majority of illness episodes were self-treated (Hannay, 1979)[5] with the majority of advice and treatment stemming from home medical care (Elliot-Binns, 1973). More recent research continues to explore the manner in which patients deal with symptoms of ill health through self-care, self-treatment and self-medication, without engaging with the formal health care system (Sowell et al, 1997; Berman & Iris, 1998; Howlader & Bhuiyan, 1999; Rogers & Hay, 1998; Leyva-Flores et al, 2001; Bhatia & Cleland, 2001; Ahmed et al, 2003; Zaman, et al, 2004, Ahmed et al, 2006). The emphasis on these forms of illness response has generated both criticisms and enthusiasm in terms of future promotion and integration

[5] Hannay (1979) introduced the 'symptom iceberg' which described individuals' decision to ignore, tolerate or self-treat various symptoms. Health and well being constitute the base of the iceberg. Individuals move upwards through self-care, primary care and secondary care towards specialised tertiary care at the apex of the iceberg.

of self-care into health care systems and wider health seeking behaviour[6] (Abosede, 1984; Kickbush, 1989; Dean & Kickbush, 1995; Illich, 1995; Chapple & Rogers, 1999; WHO, 2000a; Chang & Trivedi, 2003).

Despite the concern voiced in some quarters (Abosede, 1984; Rasmussen, 1989), an interest in self-care has continued to grow since the 1980s. Changes in the pattern of disease from acute to chronic (Segall & Goldstein, 1989; Orem, 1991), increasing discontent with a depersonalised health care system (Illich, 1995) and shifts from a cure to a care philosophy in treatment provision (Health Canada, 2004) have all been suggested as possible causes for the rise in self-care utilisation. The need to control escalating health care costs (Anderson, 1990); an increase in alternative health providers and the growth in lay knowledge of health are also advocated as influential factors (WHO, 2000a; Pagan et al, 2006).

2.2 Definitions of Self-Care

Self-care has emerged as a multi-dimensional construct with numerous definitions and approaches. Definitions of self-care are fraught with problems due to the nature in which this health behaviour can become intertwined with external assistance and treatment by lay health practitioners. This is represented by the integration of terms such as self-medication, self-management and self-treatment into the wider concept of self-care. The variety of terminologies has been accentuated by discipline specific definitions, suggesting that the analytical focus differs (Meetoo & Temple, 2003). Many of these influences stem from different social, economic, political and historical factors (Wilkinson & Whitehead, 2009). This has led to self-care being referred to as a "movement, concept, framework, model, theory, process or phenomenon" (Gantz, 1990, p. 2). Diversity of the concept makes this area of health care response and/or prevention fairly rich and reflects the complexity in which self-care can become embedded in society, including health care practices, lifestyles and socio-psychological perspectives (Punamaki & Aschan, 1994; Chapple & Rogers, 1999). However, clarification and understanding is needed to constructively address self-care in terms of potential support for individuals, households and communities, potential integration into health care systems and applicability to wider disease management strategies.

[6] This is defined as a strategy for treatment action based upon symptom definition (Christakis et al, 1994).

A review of the literature highlights that a wide range of behaviours fall within definitions of self-care including themes of individual responsibility, collective responsibility, prevention and response. Diagnosing health conditions, responding and managing illness are also associated with self-care. Activities involved in maintaining good health or preventing a decline in health have been acknowledged. Barofsky (1978) distinguishes between four types of self-care behaviour: regulatory (routine health maintenance activities such as eating, sleeping and personal hygiene); preventative (adherence to self-selected practices such as exercise, dieting and self-examination); reactive (self-initiated responses to symptoms that have not yet been labelled by a physician as illness or disease); and restorative self-care (compliance with a professionally prescribed treatment regime of medication and behavioural change). Barofsky points out that one set of self-care activities is not necessarily predictive of others. However, these suggest the complex and interwoven nature of many possible self-care behaviours and implications for the manner in which self-care may be applied to health in Bangladesh.

Other conflicting beliefs about how self-care should be defined are presented by Levin (1976) and Russell & Iljon-Foreman (1985). Holistic, social, medical and political ideologies are stipulated as underlying perceptions of self-care. According to these authors the holistic approach to health and illness regards self-care as one component of lifestyle management in which professional care acts as a supplement or substitute to self-care if required. A social approach aims to facilitate competent participation of all health care activities in which self-care is a primary outcome measure. The medical model perspective of self-care provides a definition from the health professionals' position viewing self-care as actions undertaken by health care providers. Within this perspective it is assumed health professionals are the key determinants of levels of self-care and that self-care represents a second best choice in the absence of primary health care. Finally, political perspectives of self-care question the impact of self-care adoption on the health system and professional care.

One of the most widely referred to perspectives of self-care is the definition and theory developed by Orem (1991; 1995; 2001). Subject to ongoing refinement and study since its inception this theory of self-care incorporates three definitions internal to an overall definition of the concept. Self-care agency (ability to care for oneself), self-care agent

(the self-care provider – patient or caregiver) and the self-care deficit (health limitations causing an individual to be incapable of self-care) are outlined. A further three categories of self-care needs constitute the theory. Universal needs (sufficient water, food, air), developmental needs (living conditions, human development), and health deviation needs (seeking medical treatment and learning to live with pathology) are involved (Comley, 1994). This theoretical approach to self-care defined the concept as a purposeful and learned behaviour which individuals acquire during childhood within the family (Becker et al, 2004). Self-care then develops over the life course but remains influenced by culture, habits and beliefs (Easton, 1993). The geographical context and culture of Bangladesh could therefore represent pertinent influences on self-care behaviour.

Dill et al (1995) offer an alternative model using an interpretive approach that captures the personalised and contextual experience of self-care and self-care decision processes. Within this research the authors identify individual self-care, formally guided self-care and combination self-care. The former refers to self-care actions reached by the individual in isolation using their own knowledge and experience. Formally guided self-care is the response undertaken on advice and/or supervision of a medical professional, while combination self-care refers to an amalgamation of the first two responses, which can also involve support from social networks (Dill et al, 1995).

Vickery & Levinson (1993) differentiate between medical self-care (dealing with medical problems) and health self-care (health maintenance and improvement). This is reflective of the majority of self-care definitions which are predominantly composed of immediate responses to symptoms or activities that maintain health (Dill et al, 1995). Definitions provided in Box 2.1 below reflect this diversity to some extent, although the majority stem from research conducted in industrialised countries. Those definitions highlighted in italics are from research conducted in the developing world. Therefore the majority of definitions may not be truly reflective of self-care adopted in developing countries.

Box 2.1 Definitions of Self-Care

Author	Definition
Levin (1981)	A process by which people function on their behalf in health promotion and prevention and disease detection
Levin & Idler (1983)	Activities individuals undertake in promoting their own health, preventing their own disease, limiting their own illness, and restoring their own health. These activities are undertaken without professional assistance (p.181)
Fleming et al (1984)	[A]n intentional behaviour that a layperson takes on his or her own behalf, or on the behalf of the family, friends, or community, to promote or to treat illness (p. 950)
Dean (1986)	The range of activities individuals undertake to enhance health, prevent disease, evaluate symptoms and restore health. These activities are undertaken by lay people on their own behalf, either separately or in participation with professionals. Self-care includes decisions to do nothing, self-determined actions to promote health or treat illness, and decisions to seek advice in lay, professional and alternative care networks, as well as evaluation of and decisions regarding action based on that advice (p.62).
Dean (1989b)	The range of behaviour undertaken by individuals to promote or restore their health (p.117)
De Freise et al (1989)	Actions taken by lay persons in their own health interest without formal medical supervision
Van Agthoven & Plomp (1989)	Complex of activities with which each individual is personally involved in order to live productively in his/her environment (p.245)
Kickbush (1989)	The adoption of a healthy lifestyle, which means individuals contribute towards their own health by avoiding risk factors, adopting more positive health behaviours and by self-monitoring (p.126)
Orem (1991)	Learned goal-oriented activity of individuals. It is a behaviour that exists in concrete life situations directed by persons to self or to the environment to regulate factors that affect their own development and functioning in the interests of life, health and well-being (p. 64)

Punamaki & Aschan (1994)	Patients' ability to exercise control and responsibility over their own health and illness
Dean & Kickbush (1995)	The range of health related decision-making and care undertaken by individuals on their own behalf…it is the individual person that acts (or does not act) to preserve health or respond to symptoms (p.36)
Berman & Iris (1998)	Physical, social, psychological and spiritual activities related to both illness and wellness (p.225)
WHO (2000a)	The primary public health resource in the health care system. It consists of the health activities and health related decision-making of individuals, families, friends, colleagues at work, and so on. It includes self-medication, non-drug self-treatment, social support in illness, and first aid in everyday life. (p.4)
Leyva-Flores et al (2001)	*Care provided by the person suffering some ailment or by a member of his/her family, a friend or a neighbour* (p.18)
PAGB (2003)	A lifelong habit and culture. It is the action individuals take for themselves and their families to stay healthy and manage minor and chronic conditions, based on their knowledge and the information available and working in collaboration with healthcare professionals where necessary (p.7)
Ahmed (2005)	*Expanding from no medication other than rest and nursing to instances when common home remedies, over-the-counter drugs, or herbal preparations are taken without consultation with any health care provider* (p.12)
Department of Health (2005)	The actions individuals and carers take for themselves, their children, their families and others to stay fit and maintain good physical and mental health; meet social and psychological needs; prevent illness or accidents; care for minor ailments and long term conditions; and maintain health and wellbeing after an acute illness or discharge from hospital (p.1)

The lack of consensus is highlighted by the role of professional medical assistance which has been both included and excluded as a means of self-care. For example Haug et al (1989) define self-care as exclusively non-professional in contrast to Hickey et al (1986) who view self-care as interactive with the health care system. Alternatively

Rogers & Hay (1998) suggest conceptualising self-care as a continuum spanning from self-care managed alone at one end, to self-care shared with professionals at the other end of the continuum. Clarifications of this issue are proposed by Segall & Goldstein (1989) who posit a differentiation between primary and secondary self-care. The former incorporates actions based on individual's knowledge and experience, whereas actions in the latter stem from information obtained in consultation with laypersons and professionals. What is critical according to these authors is that care is self-managed or within the individual's control rather than provided by the person or someone else. Similar ideas were presented from a review of self-care from experts in six different disciplines (Gantz, 1990). This identified four characteristics specific to self-care which included the capacity to act and make choices and focuses on aspects of health care under individual control (as opposed to social policy or legislation).

Proponents of the individual exercising control and responsibility over their own prevention or response to illness through self-care fail to take into account levels of agency[7] at the disposal of the individual. This is particularly applicable to the developing world context in which choice and accessibility to forms of self-care practice and the health care system can be at a premium (Ayeni et al, 1987; Field & Briggs, 2001; Needham & Bowman, 2003). Thus potentially restricting individuals' ability to prevent and/or respond to illness as ideally desired. Therefore, merely defining self-care on the basis of the individuals' actions may be an inadequate conceptual and practical application in terms of the context of Bangladesh. Berman and Iris (1998) acknowledge self-care as a 'value laden-concept' grounded in value systems and judged by society, thus highlighting the potential influence of numerous social, cultural, behavioural and economic factors. All of these issues resonate with aspects of health seeking behaviour in developing world countries (Mackian, 2002; Muela et al, 2003) and more specifically in Bangladesh (Zaman et al, 2004; Ahmed, 2005) and have been demonstrated to effect self-care adoption (Ahmed et al, 2003; Ahmed, 2005; Edgeworth & Collins, 2006; Pagan et al, 2006). Therefore definitions which allude to, or incorporate collective responsibility and forms of engagement with medical professionals appear to hold greater value in terms of examining self-care for this thesis within rural Bangladesh.

[7] Agency refers to human capacity to exercise control and take action in formal and informal contexts. Levels of an individual's agency are often disputed as it can be contested that actions are determined by the social structures in which the individual lives and operates (Titchen & Hobson, 2005).

Consideration of collective responsibility in health behaviours such as self-care requires explicitly understanding the meanings attributed to self-care by individuals. It is argued that this can only be achieved through studying community lifestyles and history (Kickbush, 1983; 1988). However, prior to undertaking these forms of assessment it is essential to ground the reasons that underscore the importance of self-care for many impoverished groups as well as the types of self-care practised.

2.3 Types of Self-Care

Self-care has been described as a self-evident first step to feeling unwell and can therefore be difficult to describe as a specific reaction to illness as it can be the decision to seek a form of treatment within the mosaic of health seeking behaviour (Van der Geest, 1987). Self-care can encompass actions related to disease prevention, illness treatment, health promotion and chronic disease management and rehabilitation (Bhuyan, 2004). However, within many situations the first step in self-care may be taking increased rest and altering diet and exercise habits (Freer, 1980; Dean et al, 1983; Punamaki & Aschan, 1994). This diversity in self-care practices is reflected in research that has identified up to thirteen categories of self-care covering social relations, recreation and hobbies, and treatment of symptoms of disease (Punamaki & Aschan, 1994). It is also reflected in the range of illnesses for which self-care can be utilised as a treatment response. For example research has been provided for diabetes (Maclean, 1991; Nyhlin, 1991; Anderson et al, 1996), minor illnesses in children (Cunningham-Burley & Irvine, 1987), depression (Peden, 1994), schizophrenia (Baker, 1995), arthritis (Shaul, 1995), multiple sclerosis (Stuifbergen & Rogers, 1997) and HIV/AIDS (Sowell et al, 1997). Additionally, the importance of home treatment for malaria has been identified in a number of studies (Foster, 1995; Hamel et al, 2001; Nyamongo, 2002). Although a large proportion of the research conceptualises self-care as a response to symptoms (Dean, 1986; 1992), other literature acknowledges the role of previous illness experiences and interpretation of perceived disease severity. This indicates temporal and behavioural dimensions to the types of self-care practised (Dill et al, 1995).

Self-medication has been widely researched (Fleming et al, 1984; Segall & Goldstein, 1989). Within industrialised countries self-medication is perceived as legitimate practice

in response to many common ailments such as coughs, colds, and general lethargy oriented symptoms. In fact this is an expected response, widely encouraged by peers, family, friends and pharmaceutical advertising (Russell & Iljon-Foreman, 1985).

In developing countries types of self-care have been described as expanding from no medication and rest to the use of traditional and natural home remedies such as ORS (Ahmed, 2005). As previously stated in Chapter 1 the widespread use of ORS[8] is an example of a low cost, self-managed method of treating types of diarrhoea. Implemented throughout the developing world for the last thirty years, ORS remains the cornerstone of many development and emergency programmes tackling diarrhoeal disease (Victoria et al, 2000). It has proved to be highly effective in limiting fluid loss associated with different diarrhoea through the oral administration of sodium, carbohydrate and water mixture (Hirschhorn & Greenough, 1991). The very nature in which ORS can be self-managed by the patient represents a self-care ethos. Given the success of this particular method and its international support it will be interesting to ascertain what role ORS plays in treating diarrhoeal disease within rural Bangladesh and the implications this has for self-care as a disease management strategy.

Cultural interpretations of illness severity and cause have been explored in many parts of the developing world, often highlighting the linkage with therapeutic interventions (Blum & Nahar, 2004). These causal interpretations are most readily identified within humoral traditions regarding hot/cold food consumption which can be influential in directing treatment actions (Anderson, 1987; Manderson, 1987). The tradition associates certain illnesses, particularly diarrhoeal diseases, with the over consumption of foods which generate internal heat within the body. Foods perceived to be 'cold' are then consumed to counteract the imbalance in order to re-establish a level of health (Blum & Nahar, 2004). Types of food utilised in this process are produced and consumed within the household and constitute a form of self-care which resides within the cultural construction of illness. It is therefore likely that similar methods will be identified within this study, but questions regarding efficacy and safety of such methods remain undocumented. Until this is addressed the value of self-care through home cooked foods cannot be reasonably assessed as a disease management strategy.

[8] Initially designed and implemented in both India and Bangladesh the effectiveness of ORS was first demonstrated during the refugee crisis following Bangladesh's war of independence in 1971. The method gained prominence during the 1980s in WHO guidelines which recommended the use of ORS in the treatment of all diarrhoea episodes (Green, 1986). Continued success in assisting in overall reductions of diarrhoeal disease mortality have led some commentators to suggest ORS to be one of the most significant medical developments of the 20th century (Gerlin, 2006)

The use of medicinal plants and herbal medicines has also been documented in self-care treatments across the developing world (Ngokwey, 1995; Sowell et al, 1997; Leyva-Flores et al, 2001; Ahmed et al, 2003; Zaman et al, 2004). Specifically in response to diarrhoeal disease in rural Bangladesh Edgeworth & Collins (2006) recorded a range of self-treatments including drinking a pulse[9] and sugar cane mixture juice, drinking green coconut water and drinking water soaked in fried and flattened rice. In the case of dysentery amongst infants ORS administration followed by cold food consumption has been identified in urban Bangladesh (Blum & Nahar, 2004). However, there is little examination of why mothers adhered to these methods other than a lack of financial capital. Purchase of over-the-counter (OTC) medications used in self-medication is also becoming an increasingly common practice. This practice will be explored in further detail later in this chapter (section 2.5) through assessments of self-care adoption.

Although some forms of self-care have been recorded in developing countries, very little is known about the full range of methods used and the effectiveness they relay to the user. Furthermore, it remains to be understood why particular practices are selected for differing illnesses and whether there are any demographic influences upon the forms of self-care adopted. This latter issue is explored in detail in the following section.

2.4 Who Adopts Self-Care?

The diversity of self-care is also reflected in ascertaining particular age and socioeconomic groups' utilisation of self-care practices. As widely mentioned in health seeking behaviour literature, age, gender and socioeconomic status can influence the form of treatment response adopted (Ayeni et al, 1987; Field & Briggs, 2001; Needham & Bowman, 2003). Similar effects have been recorded in some studies examining self-care. For example, self-care amongst the elderly has been identified in which it is suggested self-medication increases with age (Dean et al, 1983; Haug et al, 1989). However, evidence to reinforce this idea is lacking in number and quality. Dean (1992) offers further insight into the relationship between age and symptom response identifying the role of illness perception and social circumstances. Overall findings indicated age was related to some self-care responses such as bed rest; however the majority of effects were in relation to social and psychological factors. Again results have failed to yield consistent predictors. More recently self-care has been identified as

[9] Pulse is a type of lentil/chickpea

a significant health resource for the elderly (Hoy et al, 2007). Although further research in this area is required, studies to date indicate that older people are more likely to engage in self-care practices due to an increased likelihood of experiencing episodes of illness, particularly chronic conditions less acquiescent to biomedical treatments (Dill et al, 1995). In the context of Bangladesh, avoidance of seeking care with qualified health professionals has been linked to increased adoption of self-care (Biswas et al, 2006). However, there is insufficient documentation on self-care amongst the elderly within a developing country context and therefore this warrants specific examination to understand what impact age has upon self-treatment of illness.

Examination of gender differences in relation to self-care use has also been explored. Gender is often regarded as a fundamental socio-cultural influence in both vulnerability to ill health and health seeking behaviour (Dean, 1989; Okojie, 1994, Nettleton, 2006). There is a body of research examining gender differences in health seeking behaviour (Ahmed et al, 2000; Hausmann-Muela et al, 2003; Shaikh & Hatcher, 2004; Ay et al, 2009). In the developed world men have higher prevalence rates for many chronic illnesses and a higher risk of leading causes of death (Verbrugge, 1985; Lopez et al, 2006). Meanwhile women experience higher usage rates of health services and medication consumption and in developing countries such as Pakistan and Bangladesh they experience greater levels of morbidity (Nettleton, 2006). Gender inequities in health are further exemplified in Bangladesh by lower life expectancy, exacerbated by some of the highest global maternal mortality rates (MOHFW, 1998), and the disproportionate distribution of food and health care to male children (Ahmed et al, 2000). Women's lack of autonomy and status in developing world contexts including Bangladesh can restrict their mobility, decision making and access to independent income thus restricting the extent to which they can engage with formal health care (Okojie, 1994; Shaikh & Hatcher, 2004). Given this context the examination of gender differences in self-care adoption is anticipated to hold several interesting divergences between males and females. However, to date few explicit differences have been recorded. Although Dean (1989) identified gender specific influences on health knowledge which positively related to home remedy treatments among women, overall self-care responses to illness did not differ between males and females. A weak relationship between sex, home treatment and lay consultations was reported by Flemming et al (1984), while Green (1985) failed to identify any gender differences. A study conducted in Canada identified sex, age and some socioeconomic and

sociocultural variables as predictors of self-care (Segall & Goldstein, 1989). However the authors highlight extensive levels of variance in self-care behaviour which warrants further research examination.

In the developing world context, Ahmed et al (2006) noted that provision of health care interventions over an 18 month period produced different outcomes in health seeking behaviour across gender. Lower levels of female engagement with the formal health system were recorded at the end of the intervention period, indicating that higher levels of home-based care and treatment via traditional health practitioners remained in greater use compared to men. The authors discuss this difference from the perspective of factors disfavouring women's access to allopathic health care such as patriarchal norms and restricted financial capital[10] (ibid). Any potential explanations that may lie within possible female preferences for home-care or traditional methods is not touched upon. Self-care therefore needs to be comprehensively assessed from the lay user perspective to ascertain the extent of choice and preference for engaging in this health behaviour, if in fact any choice exits. Wider contextual influences on self-care, such as the patriarchal and conservative Islamic context, must also be analysed and understood in terms of gender. This research will therefore attempt to address some of this imbalance and provide a detailed examination of self-care in this area.

The self-reinforcing cycle of poverty and ill health (Narayan et al, 2000; World Bank, 2000; Currat, 2002; Hulme, 2003; OECD, 2003) outlined in the previous chapter can also be influential in the adoption of self-care. Although self-care is consistently shown to be the dominant form of care in both developed and developing countries, levels of socio-economic status are influential in the extent of self-care practice. Research has identified higher prevalence rates for self-care in areas of lower socio-economic status in the UK (Propper, 2000), Mexico (Leyva-Flores et al, 2001; Pagan et al, 2006), Vietnam (Khe et al, 2002) and Bangladesh (Ahmed et al, 2005; 2006). In particular, years of education were negatively related to self-medication usage while households with reduced asset availability are more likely to rely on self-care (Pagan et al, 2006). A weakened portfolio of assets increases the likelihood of engaging in self-care as medical services are beyond their purchasing capacity or incur too many opportunity costs

[10] A patriarchal social system exists in Bangladesh which, in many cases, helps shape the lives of women. Their lives are predominantly centred on traditional mother and housewife roles limiting their access to employment, education, health care and local government. The practice of Purdah (the seclusion of Muslim women) is also widely enforced in many areas of the country adding to the seclusion and subordination faced by women in Bangladesh (Zaman, 2005). This is discussed in greater detail in Chapter 3.

(Edgeworth & Collins, 2006). Within this context self-care "is an indicator of social inequity in health, revealing unequal access to medical care" (Leyva-Flores et al, 2001, p. 22). This suggests that in many cases it is the poor who are most likely to participate in self-care and implies it may have an important role to play in assisting households at the highest level of poverty in their approach to disease management. Given the vast numbers of impoverished households throughout rural Bangladesh self-care could prove to be both widely used and a highly valuable disease management tool.

2.5 The Importance of Self-Care

Self-care has regularly been identified as the primary therapeutic activity adopted by individuals in order to manage ill health. Therefore one of the main reasons to examine self-care is quantitative, as highlighted by a number of previous studies. Estimates range from between sixty to ninety percent of health care is self-care involving no professional intervention (Dean, 1981; Van der Geest, 1987; Mechanic, 1989; Dean, 1989; Phillips, 1990; Hardon et al, 1994; Weller et al, 1997; Bhuyan, 2004). Other research has highlighted that only one third of people with illness symptoms seek medical advice, instead opting for treatment through self-care or lay consultations (Hannay, 1979; Pill, 1988). These statistics hold greater weight when considering findings from Schulpen & Swinkles (1980) which demonstrated 60 percent under-reporting of self-medication when a two week recall period is used instead of a one day period. Thus levels of self-treatment may in fact be even higher than reported in previous research. The growing preference for self-care practices in the developing world further emphasises the importance of self-care as it is increasingly becoming individuals' first and most common response to experiencing symptoms of illness (Howlander & Bhuiyan, 1999; Bhatia & Cleland, 2001; Leyva-Flores et al, 2001; Ahmed et al, 2003; Cockcroft et al, 2004; Bhuyan, 2004; Pagan et al, 2006).

The consistent adoption of self-care practice may be a result of efficacy and effectiveness in improving patients' conditions for a variety of common ailments and chronic diseases. Various meta analysis studies have highlighted self-care interventions to be successful in treating asthma (Gibson et al, 2003), chronic pain and back pain (LeFort et al, 1998; Von Korff et al, 1998; Little et al, 2001; Lorig et al, 2001; Esrek et al, 2003). A number of other studies evaluated in the developed world concluded no

detrimental effects or harm to patients occurred through practising self-care (Rogers et al, 1999).

Cost-effectiveness of self-care support interventions has thus far not been widely recorded (Richardson et al, 2005). Despite this, some evidence suggests that conveying appropriate information to enable correct and effective self-care to take place can have significant implications not only for the individual patient but also more widely for the health care system. Morrison & Lift (1990) recorded a 7-17 percent reduction in patient use of health services as a result of appropriate dissemination and uptake of self-care practices. Forty percent reductions in visits to GPs (Vita et al, 1998), and a fifty percent reduction in hospital visits (Montgomery et al, 1994) have also been documented. In terms of the macroeconomic picture and wider issues in health financing huge potential exists to reduce both the burden on the health system and the financial support required to sustain it. This is exemplified in North America where a self-care oriented handbook designed to facilitate self-diagnosis and self-treatment of minor common ailments was distributed to 154,000 families across two states of America. Evaluation of this thirty month programme suggested a significant reduction in hospital visits and consultations which saved an estimated $34.5 million (Healthwise, 2000). Table 2.1 below outlines study findings into service reduction and estimated cost benefits of appropriate self-care. In the light of these outcomes self-care is viewed by some policy makers as a hidden health care resource (Chapple & Rogers, 1999).

Table 2.1 Cost Benefits and Health Service Reduction from Self-Care Interventions

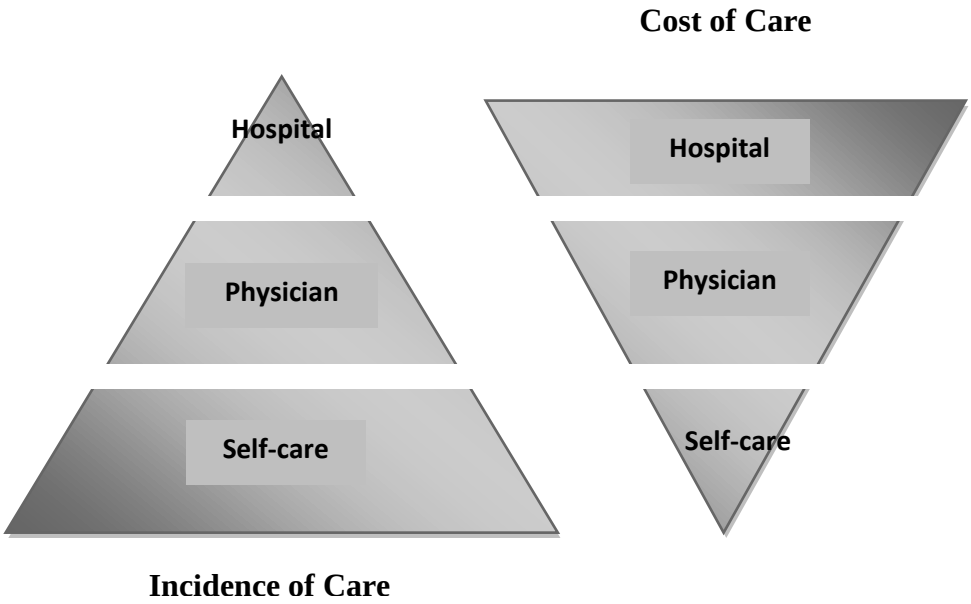
Study	Subject	Outcome	Estimated overall benefit	Cost per person
Fries et al, 1997	809 Arthritis patients	Doctor visits reduced 16%	$200-800	$75
Montgomery et al, 1994	290 Parkinson's disease patients	Doctor visits decreased 24%, Hospital visits decreased 50%	$600-900	$100
Lorig et al, 1993	343 Arthritis patients	Doctor visits reduced by 40%	$418	$75
Vickery et al, 1988	1,009 Medicare subjects	Doctor visits reduced by 31%	$37	$17
Lorig et al, 1985	5,200 California employees	Doctor visits reduced 5-17%	$130	$14
Vickery et al, 1983	1,200 health maintenance organisation households	Medical visits reduced 17%, for minor illness reduction was 31%	$50	$18
Moore & Inui, 1980	700 Californian families	Medical visits reduced by 7.5%	$90	$10

Source: Adapted from Fries et al (1998)

The economic relationship between self-care and some health care systems operating in numerous developed countries is illustrated in Figure 2.1 below. This outlines the bottom-heavy triangle representing health care practices supporting the top-heavy triangle representing health care costs (NDMAC, 2005). Although these findings have been obtained from developed countries[11] they offer huge potential for self-care delivery in the developing world. This is particularly pertinent if the same representative degree of financial impact can be achieved in terms of savings for health systems in many poor countries.

[11] This is representative of the literature. For example a systematic review of cost-effectiveness of interventions to support self-care conducted by Richardson et al (2005) included only one study from a developing country (India – a rapidly growing economy in its own right) out of thirty nine papers.

Figure 2.1 Economic and Behavioural Relationship between Self-Care and Healthcare Systems



Source: Non Prescription Drug Manufacturers Association of Canada (NDMAC) (2005)

It is worth highlighting at this juncture that the terminology and process of cost-effectiveness is not without flaws, particularly in the context of the ideas and research for this thesis. Farmer (2005) leads this critique in assessment of health support and provision for the poor by stressing that attempts to provide services which are cost-effective 'should be done apologetically'. A minimum health service package is not something that should be promoted as the mainstay of service provision or a means to improving health care and health status of the poor (Farmer, 2005). Despite heavy investment in the promotion of cost-effective strategies towards assessment of health care delivery, the WHO (2000b) also acknowledges the flaws in a cost-effective approach through recognition of its limitations in improving health and reducing health inequities. The World Health Report (2000b) addresses this issue by stating that cost-effectiveness is;

"not necessarily [relevant] for the second health goal, that of reducing inequality. Populations with worse than average health may respond less well to an intervention, or cost more to reach or to treat, so that a concern for distribution implies a willingness to sacrifice some overall health gains for other criteria" (WHO, 2000b, p. 55).

Thus, serving the health needs of the poor is more important than whether the mechanism to serve those needs will be cost effective or not. However, the use of self-care does offer the potential of cost-effectiveness, particularly in terms of reducing service utilisation. These savings may hold some value for health systems and health intervention costs (rightly or wrongly) in helping to ensure health needs can be met in some capacity.

In terms of health systems, the value of self-care is highlighted by reviewing the impact of health services operating in several developing countries. Given acknowledgement of the income eroding effect ill health can have upon poor households (Meesen et al, 2003), the ability to access quality health care has potentially vast poverty alleviating impacts (Sen, 2003). However, the maldistribution of medical services often results in people treating themselves through lack of choice or lack of access to formal health care. In such cases Van der Geest (1987) argues self-treatment to be a second step as the individual perceives the health problem to be beyond their competencies but they decide to treat themselves as alternative treatment options are either out of reach or lacking. In Bangladesh this situation has been emphasised by recent evaluation of the Health and Population Sector Programme responsible for the delivery of health services throughout the country. Findings stated that the programme was not able to deliver a pro-poor service catering towards the needs of the poor (GOB, 1998). Self-care has also become common practice due to concerns over health care delivery and scepticism about the quality of service and benefits of professional care (Pagan et al, 2006; WHO, 2000b). Combined with a 'brain drain' of health care professionals from developing to developed countries (Marchal & Kegels, 2003), including Bangladesh (Hossain & Begum, 1998; Paul, 1999; Mercer et al, 2005), the importance of self-care rises still further. These issues are discussed in greater detail within the broader, social, economic and political context of Bangladesh in the following chapter.

The shortage of medical personnel has also created a gap in medical provisions which has been filled in many cases by informal drug markets and an increase in the availability of over-the-counter (OTC) medications (Van Der Geest & Hardon, 1990; Ballance et al, 1992; Pagan et al, 2006). The increasing ease in which medications can be acquired, particularly those which were previously only available through prescriptions, invokes a new set of circumstances and variables in which self-care can be facilitated. It also presents new conditions and questions surrounding the levels of safety and appropriateness of self-care practice. This will be discussed in greater detail

in the following section (2.6) assessing the adoption of self-care. Both these situations have implications for policy considerations when assessing strategies to manage the role self-care can play in filling some of the gaps between supply and demand for health care services in developing countries such as Bangladesh (Chapple & Rogers, 1999).

Another factor underscoring the significance of self-care is the policy of Primary Health Care (PHC)[12]. The notion of self-reliance is viewed as a cornerstone of PHC in which people are encouraged to utilise their own resources and reduce their own medical dependency. Although PHC has become a contested approach, particularly within developing countries as it has overlooked some pre-existing vulnerabilities such as caste, gender, race and age (Sundari, 1992), in addition to criticisms of an over emphasis on quantity rather than quality of care provided (Reerink & Sauberon, 1996), and weak evaluation systems (Hall & Taylor, 2003). The adoption of self-care resonates loudly with PHC and some of the approaches' basic principles of equity, self-reliance and prevention through a decentralised community-based approach in both developed and developing countries (Helman, 2007; WHO, 2009). Policy directives have reflected a move towards greater levels of patient empowerment and the facilitation of self-care practices. Within this policy shift the UK Government explicitly stated self-care as a key health service component alongside primary care, immediate care, secondary care and tertiary care (PAGB, 2003). Through initiatives such as NHS Direct[13] and the Expert Patient Programme[14] (Department of Health, 2001; Donaldson, 2003) the frontline of health care moved towards the home and the individual. Meanwhile the WHO currently advocates a shift from service delivery to community based initiatives in which self-care is viewed as a central component (WHO, 2009).

[12] Primary Health Care (PHC) was introduced in response to the wide recognition that the western medical model was failing to improve levels of health in developing countries (Werner, 1997). The 1978 Alma Ata Declaration focussed on PHC to prevent sickness and treat common health problems experienced by the poor via an outpatient approach through reduced technology, low cost, community based and multi-sectoral solutions (Braveman & Gruskin, 2003). The PHC strategy aimed to achieve full coverage at lowest cost in the pursuit of health for all in a community focussed, flexible and responsive manner (Goicoechea, 1996). It has subsequently won widespread acceptance amongst governments, donors and NGOs despite remaining a contested approach in some quarters, along with selective PHC (SPHC), and existing under utilisation of many services in developing countries such as Bangladesh (Rahman, 2000).

[13] NHS Direct is a telephone helpline staffed by registered nurses to provide health care advice. The main objective is to complete a call with advice to visit a pharmacy, or to recommend self-care where appropriate. NHS Direct started in 1998 and now receives approximately 6 million calls per year. Recent evaluation has shown 36% of callers are referred to some form of self-care (PAGB, 2003).

[14] The Expert Patient Programme was launched in 2001 designed to empower patients living with chronic long-term medical conditions. The programme aims to provide patients with support to allow them to take greater control of their own health and treatment (Department of Health, 2001).

In many developing countries the focus upon health promotion[15] has become a predominant ideology in disease mitigation and prevention. This has drawn upon the PHC theme of community participation in decision-making to facilitate empowerment at the individual and household level in order to facilitate appropriate mitigation and response strategies (Green, 2004). Self-care enables people to negotiate their own management of health and illness, and in doing so, allows for greater inclusion in the health care system. There is strong evidence for the positive impact PHC policy has had throughout resource poor countries in the developing world, which has brought about significant improvements in health (Hill et al, 2000; Rutstein, 2000; WHO, 2000c). It has also provided a 'voice' in some quarters for the poor in terms of influencing how healthcare services are delivered (Macfarlane et al, 2000; Mehrotra & Jarrett, 2002). Despite some of the political and economic philosophy underpinning health sector reforms shifting away from PHC to health sector reform during the 1980s and 1990s (World Bank, 1993), the principles and policies of PHC are now re-emerging (WHO, 2003; Green, 2004; WHO, 2008). This new focus offers a platform to maximise some of the potential self-care adoption can offer many households mitigating against and responding to ill health. However, if self-care can build upon notions of the PHC approach successfully it is important to fully understand how self-care is implemented and assess its impact.

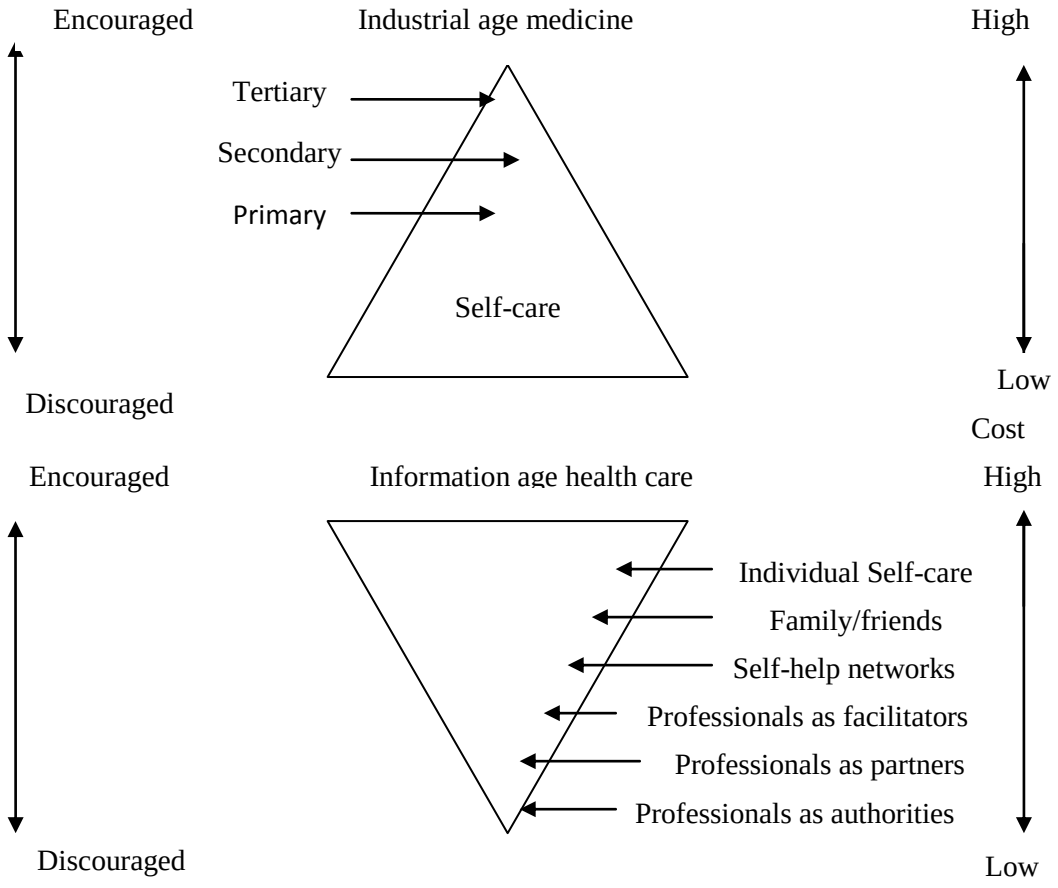
2.6 Assessing the Adoption of Self-Care

The growth in lay knowledge of health has been suggested as a possible reason for increased adoption of self-care (Health Canada, 2004). This has been explored by Bhuyan (2004) focusing on the rise in information technology pivotal to the promotion of health information for the health consumer. Prior to the widespread dissemination of health information it is suggested an industrial age of medicine operated in which self-care was overlooked by the health care system. In the current information age operating within many developed countries the role of health professionals has been diminished by the rise of self-care. The contrast between these two stages of health management and information is presented below in Figure 2.2. Through this analysis Ferguson (1992) states the information age has "established the legitimacy and importance of self-

[15] The notion of health promotion was put forward by the WHO in the Ottawa Charter which defined it as the process of enabling people to improve their health and achieve greater levels of control over their own health (Kickbush, 1989).

care" (p. 11). Given the paucity of research examining self-care within developing countries it is difficult to assess the extent to which Figure 2.2 is representative of self-care within that context. However, it does warrant further exploration, particularly in the case of Bangladesh. This is because research there identifies the importance of social networks in the facilitation of self-care and in providing a source of information and assistance to enable engagement with professional health care (Edgeworth & Collins, 2006). Additionally, the integration of modern technology such as telemedicine may also offer further avenues for the provision of self-care support. Telemedicine involves the use of telecommunications to provide medical consultations from a distance. Use of this approach is advocated to supersede many issues surrounding accessibility and distance to healthcare facilities in many parts of the developing world (Mair et al, 2000)

Figure 2.2 The Changing Role of Self-Care in Healthcare



Source: Ferguson, 1992

Support for self-care is of interest in terms of the potential implications it has for individual capacity building. More specifically, support in the right areas can increase confidence and efficacy in use of self-care practices (DoH, 2005). Support in the form

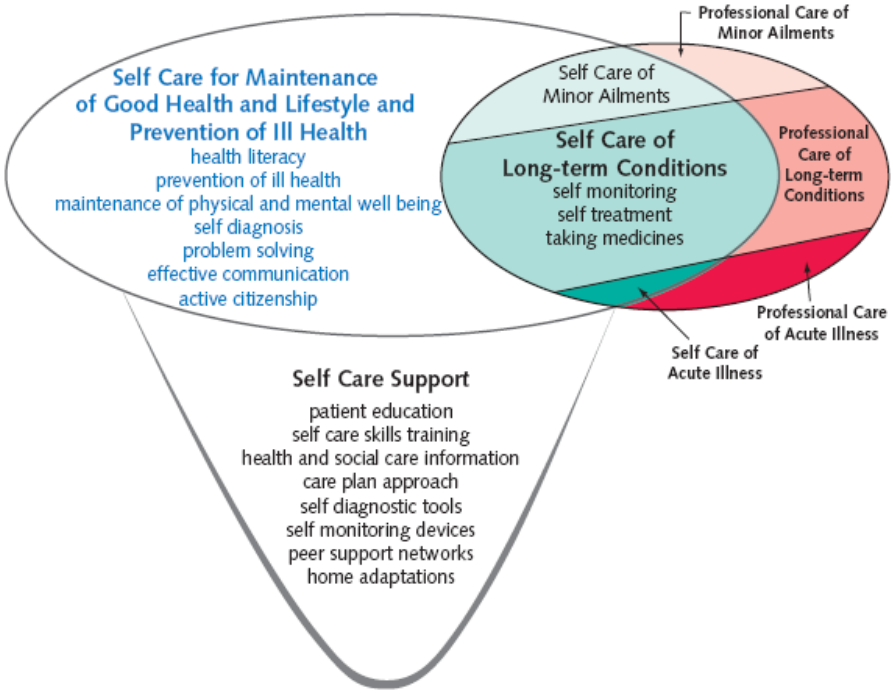
of self-care information, social capital at community level, self-care education programmes and health practitioner training on self-care guidance have been implemented to some effect in developing countries (DoH, 2005). Types of social support have been referred to as "the degree of emotional and physical assistance perceived in one's life" (Wang & Laffrey, 2001, p. 124) and a "lifelong coping mechanism that has a cumulative effect" (Johnson, 1996, p. 61). Although the specific mechanisms of the relationship between self-care and social support are not well understood, there is some evidence to suggest they are positively related (Jirovec & Konso, 1990, Wang & Laffrey, 2001). The potential benefits social support offers self-care can include motivation to engage in self-care (Orem, 1995) and increasing self-care agency (Mapanga & Andrews, 1995). Perceived support for self-care through family has been identified as a significant coping strategy (Hennesy, 1989).

However there is not a conclusive evidence base for the role of social support and its impact on adoption of self-care. Particularly within a developing world context where the role of the family can be important in pooling resources and modifying livelihood strategies to cope with 'shocks' such as those caused by ill health (Moser, 1998). Family assistance can also act as a preliminary safety net in health seeking behaviour and provision of care to sick individuals (Zaman, 2005). However, questions still remain on how self-care might involve or reflect decisions made within the immediate and wider family, and how individuals may utilise social networks to adopt self-care strategies (Dill, et al, 1995). Furthermore do self-care decisions ever take place without consulting other family and/or social network members? What role do formal and informal health practitioners play in influencing and/or supporting the self-care consultation process for various illnesses and, in particular, experiences of diarrhoeal disease?

The different types of self-care support are outlined to date in a developed world context are shown in the diagram below (Figure 2.3). This also represents how self-care support interlinks with the wider rubric of self-care. It should be noted that this diagrammatic representation of social support and self-care is taken from a developed world context. Therefore, it may not be wholly applicable to assessing the influence of social support on self-care behaviours in a developing world context such as Bangladesh. However, a lack of research in this area implies that the topic warrants further investigation, particularly in respect to localised and wider applications and implications of social support. Given that social networks have already been identified as offering potential

influence it is an important development issue to analyse how the mechanisms of public health interact and support self-care for the rural poor of Bangladesh.

Figure 2.3 Self-Care and Self-Care Support



Source: Department of Health (2005)

Another area of self-care requiring assessment in line with the objectives of this thesis is the administration of medications purchased through formal and informal channels. There has been a distinct rise in the informal sale of medicines in developing countries, including Bangladesh (Akin et al, 1986; Ward, 1987; Yesudian, 1994; Sclafer et al, 1997; Kamat & Nichter, 1998; Thaver et al, 1998; Geissler et al, 2000; Shankar et al, 2002; Pagan et al, 2006). One of the underlying causes in the growth of this component of the health sector stems from drug vendors[16] ability to better respond to the needs of the poor than hospitals, health centres and pharmacies (Van Der Geest, 1987). Accessibility and availability to formal components of a health care system can be highly problematic for many poor people in developing countries (Ayeni et al, 1987; Field & Briggs, 2001; Needham & Bowman, 2003). Informal drug vendors provide a solution to these issues through a cheaper, more accessible and more widely available

[16] This term is used to describe both qualified professionals such as formally trained pharmacists as well as semi and unqualified drug sellers

service that allows clients to maintain certain levels of control over their own treatment (Van Der Geest, 1987; Beckerleg et al, 1999; Bissell et al, 2001). In some cases research has shown that self-medication through drug vendors is the only means low income groups can access western medicine (Ferguson, 1988). Clients are often able to purchase medications with complete flexibility, either through buying drugs on credit (Kamat & Nichter, 1998) or receiving the exact amount required to meet their budget or particular self-treatment needs at the time of purchase (Kamat & Nichter, 1998; Sepehri et al, 2008). Drug vendors are more geographically accessible as they are often based in more convenient locations in rural areas, never more than a few miles away from those who require their services. This is in stark contrast to the location of hospitals, health centres and pharmacies in many settings throughout developing countries which can be situated over 50 miles away, thus incurring additional opportunity costs for patients attempting to access these facilities (Ensor & Cooper, 2004). Availability is also much more flexible as vendors regularly have longer opening hours, operating late into the night in many cases. This holds a great advantage compared to the rigid schedules held by formal services (Aldana et al, 2001).

Additionally, the popularity of drug vendors has been associated with the social distance between vendors and their clients. Van der Geest (1987) argues that the gap is much narrower for the drug vendor as clients are afforded greater parity in the patient – physician relationship. Individuals are able to look at the products, ask questions in relation to how products should be used and engage in a two way process of obtaining advice and medications for their particular ailment. This type of interaction is not always possible in hospitals, in consultation with doctors or when purchasing medications from formally licensed pharmacies. It is therefore one of the reasons why several studies have documented drug vendors as not only sources of medication purchases but also sites where information and advice on health problems and treatment is often obtained, particularly for common ailments (Ferguson, 1981; Shiva, 1985; Fabricant & Hirshhorn, 1987; Greenhalgh, 1987; Van der Geest, 1988; Hardon, 1994; Goel et al, 1996; Ross-Degnan et al, 1996). The opportunity to engage in discussion over medication choice and consumption corresponds to ideas presented by Kamat & Nichter (1998) describing the rising tendency for self-medication with commercial medications. It is postulated that greater familiarity with drugs and drug vendors has played a contributory role. Further factors such as changes in purchasing power of

consumers, changing health concerns and decreasing tolerance for symptoms have also led to alterations in types of self-care people access (Hardon, 1994). All combined together several authors argue that these developments have led to health becoming 'pharmaceuticalised and commodified' leading to a culture in which people increasingly 'reach for the pill' at the first stages of experiencing an illness (Jayaraman, 1986; Nichter, 1996; Kamat & Nichter, 1998; Beckerleg et al, 1999). However, the use of medications and engagement with drug vendors must be viewed within cultural and social contexts. Nichter (1996) associates the popularity of drugs with contexts in which people must address short term problems;

"A context where functional health (the ability to perform work roles in the short term) increasingly takes precedence over long term concerns about well being is a fertile ground for a flourishing trade in medical fixes." (p. 271).

Accordingly this context is applicable to many developing countries in which the need for a healthy body to ensure livelihoods are maintained has been widely documented (Chambers, 1989; Fabricant, 1999; Meesen et al, 2003; Sen, 2003; Russell, 2004), including in Bangladesh (Hulme, 2003). The immediacy required to secure better health can lead to the idea of health as a state which can be attained and maintained through medications. This context reflects a biomedical position that is the antithesis of PHC and one that has been widely promoted and exported. However it also requires financial capital to be invested, a situation which is not always afforded to impoverished groups in many parts of the developing world. Any desire to continue the pursuit of 'quick fix' easy access medications from local drug vendors could contribute to the spiral of impoverishment through ongoing expenditure if medications were required over a continuous period. This concept constitutes the notion of iatrogenic poverty (Meesen et al, 2003) as discussed in the previous chapter, and highlights one of the detrimental impacts self-medication can have for poor households. Similarly a desire to achieve immediate effects from medications has led to unrealistic expectations amongst users and creates the impression that cures to every illness can be bought (Beckerleg et al, 1999). The resultant impact of these types of user perceptions has led to pharmaceutical personnel recommending medicines which have more dramatic effects, though not necessarily offering the appropriate long term solution for the illness (Beckerleg et al, 1999).

2.7 The Critiques of Self-Care

There are also a number of other disadvantages to purchasing medications and receiving treatment from these components of the health care system in developing countries. These drawbacks include inferior quality of products, misdiagnosis and prolonged duration of medication usage, which can be exacerbated by a lack of quality control, lack of information about drugs for clients, limited choice of medications and limited medical knowledge by drug vendors (Hughes et al, 2001; Kroeger et al, 2001). The main problem presented by self-medication through the purchase of drugs is summarised by Health Action International;

"The plain fact is: *all* drugs are 'problem drugs'… What makes a drug a problem is not so much its inherent pharmacological risks, but the way in which it is used. It is impossible to talk about the 'safety' of medicines as if it was a laboratory problem. In the wrong hands or at the wrong time, even the most carefully quality-controlled medicine becomes transformed from a life-saver to a life-threatener." (Quoted in Van der Geest, 1987, p. 273)

The description is invariably more applicable to developing country contexts where over-medication, distribution of inappropriate and/or out of date medications have been regularly cited in studies of pharmacies and purchases of OTC medicines (Van der Geest, 1987; Price, 1989; Goel et al, 1996; Ross-Degnan et al, 1996; Kamat & Nitcher, 1998; Beckerleg et al, 1999). Wolffers (1989) review of 28 pharmacies in Sri Lanka found that every site distributed incomplete doses of the antibiotic Tetracycline. This situation is often in response to clients' lack of money to purchase a full prescription; however the problem is often compounded by drug vendors' lack of knowledge and medical training (Kamat & Nitcher, 1998; Hughes et al, 2001; Kroeger et al, 2001).

However, Thaver et al (1998) identified the opposite end of the distribution scale which can present an equal degree of problems. Their research from Pakistan highlighted both the over-medication of clients and the distribution of placebos by pharmacists and drug vendors. Almost two thirds of private practitioners claimed to be over medicating in response to patients desire to obtain a speedy recovery. However this process also relates to the distribution of placebos through a common theme of economics and the

desire to achieve increasing profit margins (Berman, 1987). Pharmacists claimed the addition of placebos increased the number of medications which acts to justify the fees associated with medication purchases (Thaver et al, 1998). A further example is provided by Kamat & Nitcher (1998) who state it is not in the best interests of pharmacists to advise that only ORT is used in response to diarrhoea when additional medications can be added to the treatment package. Similar circumstances may underscore the over prescription of antibiotics in Mexico which were used in 37 percent of diarrhoeal episodes (Bojalil & Calva, 1994). Economics is therefore a driving force in the attraction and retention of clients for many drug vendors within an increasingly competitive and pluralistic health market. By offering treatments perceived to be the best quality or the most effective, drug vendors appear to have profit and loss at the forefront of their medical services rather than the needs of the patients themselves. This in itself highlights one of the primary concerns in relation to self-medication and self-care.

Both the under and over distribution of medicines present an additional problem for consumers. The incorrect use of medications can serve to mask other symptoms, thus making it difficult to diagnose more serious conditions (Hardon, 1994; Nitcher & Vuckovic, 1994). A further problem is addressed by Nitcher (1996):

"The misuses of drugs such as antibiotics foster resistance which in turn fosters demand for newer generation antimicrobials which in turn are misused." (p. 306).

Receiving inadequate treatment in this context favours development of pathogen resistance leading to illness continuation. This can then ultimately increase direct and indirect costs of ill health pushing individuals and households into positions of greater vulnerability (Muela et al, 2003).

The preference for self-medication via formal and informal drug vendors must be assessed within the wider range of therapeutic choices available in the research setting under examination (Van der Geest, 1987). It is also important to note that utilisation of these health providers may well constitute one step within the wider health choices adopted. For example, people may access the most cost effective treatment before moving to alternative treatment therapies if self-medication is unsuccessful or increasing in costs. This may then force the person to engage with more costly or more

inconvenient forms of treatment (Young, 1981). In many cases the potential advantages of self-medication appear to be associated with many other disadvantages, not just in terms of an individual's health but also the potential consequences upon individual and household livelihoods. Evaluations frequently refer to potential risks involved in the use of inappropriate, incomplete and expired medications, in addition to the effect of placebos and over medication upon the health of the individual.

Alternatively self-medication is perceived as an autonomous act representing levels of empowerment in terms of prevention and response to ill health (Levya-Flores et al, 2001). The key question must reside in whether the potential benefits outweigh the potential risks of this form of self-care, particularly in regards to the potential negative health implications associated with self-prescription of medications, and within the context of rural Bangladesh. This question remains unanswered to date and will therefore constitute an important aspect of identifying indicative forms of appropriate self-care and isolation of behaviours that are suggestive of inappropriate self-care within the research for this thesis. The findings from this analysis may indicate self-care to be an appropriate response to illness including diarrhoeal diseases, however the specific conditions in which this process takes place need to be taken into account. Therefore, in order to make suitable assessments of self-medication benefits and risks in conjunction with the wider issues of safe and appropriate self-care the cultural and social context of self-treatment in rural Bangladesh must be taken into consideration. This will be discussed in greater detail in the following chapter.

Proponents of self-care emphasise its value in assisting individuals to deal with their own health, respond to illness and contribute to improving the efficiency of health care systems (Levin, 1976; Ahmed, 2005; WHO, 2009). However, critics highlight how self-care can be dangerous and increase overall medical costs if inappropriate methods of self-treatment are undertaken (Abosede, 1984; Wilkinson et al, 1987; Chang & Trivedi, 2003). In addition to some of the dangers in self-medication practices previously mentioned, other concerns over inappropriate forms of self-care include delays in seeking correct medical attention (Abosede, 1984; Ramussen, 1989) and treatment misuse through lack of knowledge and education (Arztliche, 1981). This may lead to the concerns held in some quarters that the lay healer lacks sufficient information and expertise to make accurate diagnosis and the ability to treat disorders successfully (Vissing, 1987). This potentially leads to the ethical and legal implications associated with the transfer of expectation and responsibility from health professional to the lay

individual (Russell & Iljon-Foreman, 1985). Such an expectation includes the notion that individuals will successfully make behaviour changes for disease management and prevention, often in contexts where the healthcare system has been unable to manage the disease process (Redman, 2007). These changes are also likely to be expected without alterations to wider societal, economic and political structures which increase vulnerability to disease in the first place and the ability to respond to cases of ill health (Wilson et al, 2007). Therefore the shift towards the individual directs focus away from the structural constraints which may lie at the heart of social and economic inequities (Chapple & Rogers, 1999; Redman, 2007).

Further criticisms are directed towards self-care through the notion that it brings increased personal responsibility which in turn creates the potential for 'victim blaming' (Segall & Goldstein, 1989). This entails the assumption that the individual is responsible for conditions that induce ill health, or accusing the poor or the uneducated of causing their own ill health (Crawford, 1977; Kronenfield, 1979). However, prevention of environmental or occupational factors that may bring about illness is often beyond the control of the individual. Therefore personal culpability may become equated with any illness arising from these factors leading to blame and victimisation of the individual responsible for their prevention (Segall & Goldstein, 1989). The validity of the critique however fails to consider the context of self-care adoption in developing world contexts such as rural Bangladesh. As previously mentioned, the lack of agency held by many people may render the issue of individuals having the power to control conditions which give rise to illness as obsolete. Any form of blame is often attributed to other powers, fate, aspects of religion, institutions, political process or simply bad luck amongst a culture of fatalism (Davison et al, 1992), rather than leading to accusations or victim blaming of particular individuals. However, this point is under researched, particularly in the specific context of self-care adoption in rural Bangladesh and thus warrants further exploration in line with the themes of this thesis.

Self-care has also been targeted within debates surrounding the extent of health service provision (Bolaria, 1979). In some quarters self-care is used to justify reductions in health services as response to illness is placed upon the individual. It is argued that this shift conceals the social causes of disease and "distracts attention from the social, political and economic aspects of ill health" (Segall & Goldstein, 1989, p. 160).

Although several benefits for health systems have been highlighted in terms of reducing costs and the burden on service delivery this argument does appear to be highly valid in terms of negating responsibility to the population through a desire to reduce current stress on the health system. These types of aspirations could easily be directed towards health policy in the developing world attempting to alleviate health system burdens through the promotion of self-care activities, if they were deemed to be appropriate. This position has been contested by restating some of the main benefits self-care has to offer, particularly in terms of decreasing dependency and offering the potential to improve awareness of hazards to health (Katz & Levin, 1980). This could include socio-political, environmental and economic factors influential in the linkages between health, hazards and associated risks. As such, self-care would offer an excellent means to assisting disease risk management and could constitute a disease risk management tool itself.

2.8 Conceptual Clarity and Reconstruction of Self-Care for the Developing World

Having outlined the numerous definitions, constructs and types of self-care in conjunction with assessments and critiques of the approach it is clear that this is a varied and interchangeable concept. It includes a range of potential behaviours such as illness prevention and health maintenance. Lifestyle behaviours, symptom evaluations, a range of self-treatments (self-medication, non-medication), self-referral, and some engagement with various non-medical health practitioners and the professional health service sector have also been partly delineated as components of self-care (Segall & Goldstein, 1989; Chapple & Rogers, 1999; Chambers, 2006). The latter is a contested component of self-care in some quarters (Haug et al, 1989; Clark, 2003) which introduces further deliberations and complications in attempts to add conceptual clarity to the self-care debate. With such a divergent range of actions it is no wonder that definitional problems have arisen and variations of accepted forms of self-care are found within the literature. One of the main points of contestation stems from the inclusion of compliance behaviour, in which individuals comply with health practitioner treatment regimens and/or behavioural change (Wilson et al, 2007). Further questions surround the role of self-control, deemed as the essence of self-care in some sectors (Segall & Goldstein, 1989; Gantz, 1990). Within the context of developing countries a wide range of research outlines various barriers to care strongly indicating that self-

control can be restricted by a range of factors such as accessibility to medical services (Needham & Bowman, 2003), gender (Ojanuga & Gilbert, 1992; Okojie, 1994; Shaikh & Hatcher, 2004), cost (Russell, 1996) and poverty (Peters et al, 2007). With such a range of constraints imposed upon individuals seeking to achieve access to various health care providers the need to develop local solutions to the management of ill health is further reinforced (Muela et al, 2003).

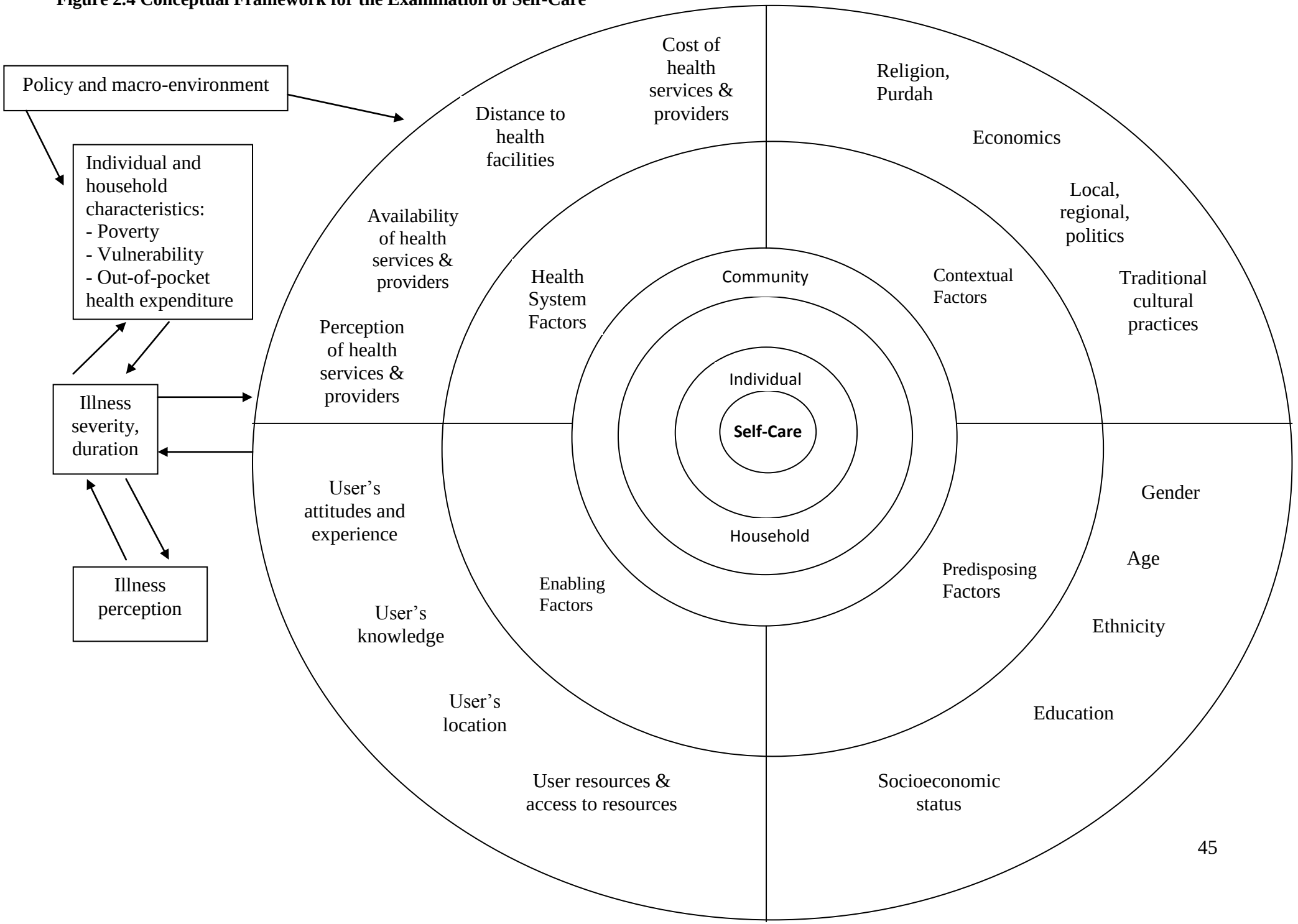
Given the high propensity for self-care practices across the developing world, particularly amongst the poorest members of these societies, it seems apparent that a more comprehensive understanding of self-care and the factors that facilitate and prohibit its uptake as a disease mitigation and illness response strategy is required. Despite the growth in self-care related activities the associated expansion of research on this topic predominantly relates to the developed world. As such, the philosophy and practice of self-care remains in its infancy in developing countries (Bhuyan, 2004). Therefore establishing conceptual clarity becomes an even greater challenge due to the lack of findings and consensus on theory. This research attempts to address some of this imbalance and provide a detailed examination of self-care in the context of rural Bangladesh.

In order to establish clarity of the concept for research in rural Bangladesh an accurate and appropriate definition represents the first stage in moving towards examination of self-care in its many facets and uses as a disease management strategy. For the purposes of this research self-care is defined as "the action individuals take for themselves and their families to stay healthy and manage minor and chronic conditions, based on their knowledge and the information available and working in collaboration with healthcare professionals *[where possible, desired*] and necessary" (adapted from PAGB (2003)). As self-care is seemingly a factor in almost all episodes of ill health, self-care can become inter-related with both the formal and informal health care systems in Bangladesh. It is not mutually exclusive as the decision to seek advice and treatment from health practitioners and the adherence and practice of certain treatment advice is reliant on the individual and the process of self-care. The definition has also been adapted to account for reduced levels of agency and processes of self-control as these factors can invariably be circumscribed within a rural poor context as previously described. As with any definition of self-care there can be arguments surrounding its applicability and the extent to which agency, health system interaction and stages of self-care are incorporated. However, having reviewed a wide range of evidence in

conjunction with considerations of health seeking behaviour literature in low income country contexts the above definition is deemed to have greatest applicability to this research and helps clarify the basis on which the thesis objectives are formulated.

There is also a need to develop a tool for understanding how populations engage in self-care in the developing world. Currently self-care models address the concept from a care practice perspective (Orem, 2001; Pender et al, 2002) or for health promotion in aging (Leenerts et al, 2002). Based on the arguments and previous research findings presented within this thesis thus far, a specific model designed to examine self-care in developing country contexts can now be presented. Examination of self-care from a holistic perspective which considers both material and structural factors is addressed in the framework outlined in Figure 2.4. The framework builds on elements of the socio-behavioural model of health seeking behaviour (Andersen, 1995) and some broader concepts of health service access frameworks (Peters et al, 2007). It has been developed for use in a low income country with specific focus upon disadvantaged groups in Bangladesh. Within the framework self-care is situated at the centre of four main factors that can influence self-care adoption and utilisation. It is suggested that self-care is driven by this set of factors which consists of predisposing factors, enabling factors, health system factors and contextual factors. To the left of the circle are broader influences on health seeking behaviour. Illness severity and duration, variously affected by perceptions of illness, directly affects an individual's subjective decision to engage in some form of health seeking behaviour. In the context of self-care adoption this becomes a two way process as the individual has the opportunity to re-assess his or her health condition and make further subjective judgments on illness severity and duration based on the perceived success of self-care practices undertaken. However, the health condition itself can be variously affected by household and individual factors, particularly aspects of poverty as discussed in Chapter 1. The wider macro-policy environment can also exert influence on household status. It also represents a direct determinant of health services and corresponding issues of availability, accessibility and quality of service provision as shown in the framework.

Figure 2.4 Conceptual Framework for the Examination of Self-Care



2.9 The Context of Self-Care

All of the issues discussed above in relation to the definitions, importance of self-care, and adoption and implementation of self-care are contextually dependent. Unfortunately the majority of research approaches the concept from either a too broad or too narrow perspective without taking into account the social context in which self-care takes place (Ragins, 1995). Gantz (1990) reported several health care disciplines agreement that self-care is situation and culture specific. Therefore, specific social, cultural, economic, and political factors can be influential in the choice of self-care as a response to ill health and diarrhoeal disease. For example, in countries where access to health facilities is restricted due to distance, opportunity costs or the influence of traditional beliefs, self-care could be an explicit decision taken after assessing the other opportunities and restrictions presented by alternative treatment options.

However, the vast majority of research has used models and definitions of self-care in which the individual is viewed as an autonomous decision maker. Assuming this position leaves little room for cross-cultural or situational differences as it represents a Western perspective of the self-care and health seeking behaviour process (Becker et al, 2004). By adopting these approaches which are devoid of context, the complexity of culture can become obscured in its relevance to self-care (Becker et al, 2004). It is argued that this context and culture can shape both the way self-care policy and practice is implemented (Ragins, 1995). Therefore it is vital that self-care is explored and understood within a specific context. There is a need to understand the processes underlying self-care activities both in terms of specific complexities involved in self-care adoption and obtaining information on current practice to enable health professionals to build on patients existing self-care strategies (Chapple & Rogers, 1999). In order to further understand the detail and context of self-care it is important to understand the context within which illness is attended and the treatment options available to the rural Bangladesh household. It is therefore important to explore the wider historical, socioeconomic and political context of Bangladesh and examine how the health care system is organised at both formal and informal levels. This will be discussed in greater detail in the following chapter.

2.10 Conclusion

In summary this chapter has explored the core concept of self-care. In particular, research examining the adoption of self-care within developed and developing countries have been explored to identify and understand the key features which constitute self-care. The range of definitions, theoretical perspectives and types of self-care highlights the complexity of the concept which invariably leads to issues surrounding its use as an appropriate health response and intervention strategy. However the evidence documented also identifies a number of pertinent questions surrounding the issue of self-care adoption in developing country contexts. The lack of empirical data within the developing world renders many criticisms obsolete and highlights the need for further research. Consequently the chapter concludes by drawing together the divergent forms and explanations for self-care in order to establish some conceptual clarity and re-construct the notion of self-care for disease management in the specific context of Bangladesh. Following on from this reconstruction of self-care the subsequent chapter examines the Bangladesh context in further detail.

CHAPTER 3: THE SELF-CARE CONTEXT: NATIONAL AND LOCAL HEALTH CARE PROVISION, CULTURE AND SOCIETY IN BANGLADESH

"Self-care actions do not take place in a political and societal vacuum"
(Kickbush, 1989, p. 129)

3.1 Introduction

All the issues discussed in the previous chapter in relation to self-care are contextually dependent. In order to further understand the adoption of self-care it is imperative to take into account the local milieu where self-care takes place in relation to the disease environment, health care choices, and the wider cultural, socioeconomic and political situation. This chapter addresses these points at both the national and local level describing broad characteristics of Bangladesh and details of the formal and informal health care providers which operate within the country. Specific details on the three field site locations in Bangladesh where research for this thesis was conducted are also described. This includes levels of health care provision in Chakaria, Domar and Matlab respectively.

3.2 Country Profile

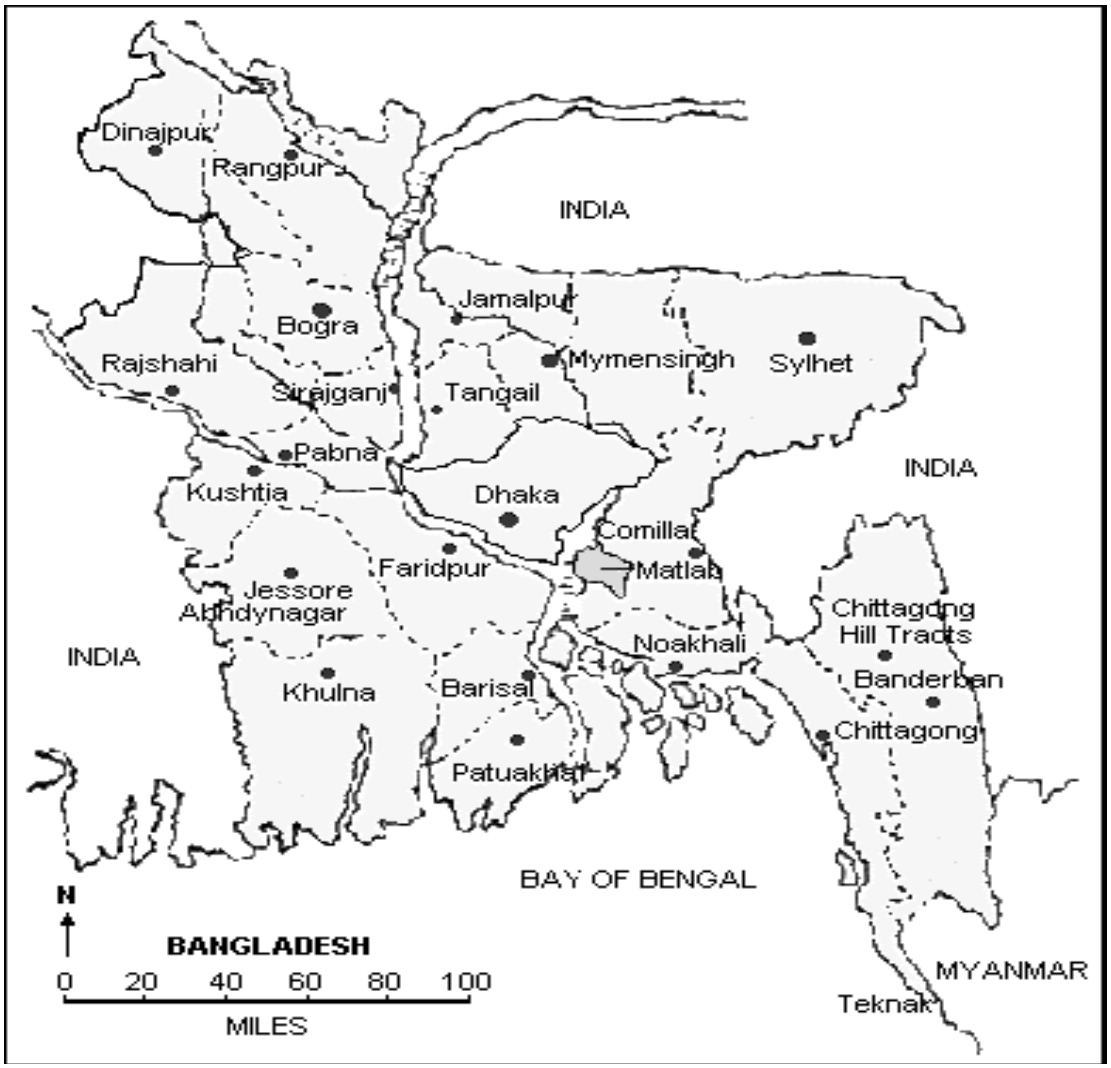
Before the partition of India, the majority of present day Bangladesh[17] lay within the province of East Bengal, but from 1947 until independence the country was known as East Pakistan. Following the war of liberation Bangladesh became an independent country in 1971 that has been governed by long periods of military rule until 1991 when democratic elections were held (Anan, 2007). Present-day Bangladesh remains a democratic country situated on the Bay of Bengal largely surrounded by India and sharing a small border with Myanmar (Burma). More than 88 percent of the population are Muslim reflecting the declaration of Islam as the state religion in 1988 (Amin et al, 1997).

Bangladesh is a country with high levels of deprivation and remains one of the poorest countries in the world (DFID-B, 2002). Lying in the delta of three major rivers (Ganges, Brahmaputra, Meghna), the country's geographical location and climatic conditions accentuate the impact from environmental hazards such as cyclones and flooding. This frequently leaves one-third of the land under water on an annual basis

[17] Administratively the country is currently divided into six divisions, Dhaka, Rajshai, Chittagong, Sylhet, Barisal and Khulna. These are further divided into districts which are divided in Upazilas and then divided into unions which then comprise the villages (Khonder, 2002).

(Khan, 2001) and places between 15 to 20 million people at the risk of river bank erosion (Hutton & Haque, 2004).

Figure 3.1 Map of Bangladesh



Source: Bosch (2005)

Paradoxically about 6 per cent of the country is affected by drought, though at times in the past thirty years this has spread to almost the entire country in varying degrees (Khatun, 2003). As a result Bangladesh is considered to be the world's most disaster at-risk country (ISDR, 2002; DfID, 2006), which includes the onset of disease epidemics due to their damaging impact upon households' economic and social status (Zwi & Yach, 2002; Connelly et al, 2004). These events affect vast numbers of the predominantly rural population (74%) and can have a detrimental impact upon sustainable economic development. It is estimated that the impact of environmental disasters affects 5.2 percent of the country's GDP, (World Bank, 2004), including the health and livelihoods of affected individuals (Khatun, 2003). As disaster and poverty

are mutually reinforcing it is the poorest who are affected to the greatest extent during times of flooding, drought, cyclone or disease epidemics.

Gross National Income is approximately $50 billion, which equates to an average of $380, annually per person (BRAC, 2004). Nearly 40 percent of GDP comes from agriculture, with rice, jute, tea and fish as other important commodities (Jahan, 2001). The country has also begun to exploit natural gas resources. Recently the manufacturing industry has grown substantially resulting in a large rise in rural to urban migration for employment, especially among young women (BDHDR, 2001). Despite this sectoral growth, income poverty has declined from 58 percent of the population in 1983/84 to below 50 percent by the year 2000 (GoB, 2004). Half of the country's 140 million people are poor with the absolute number rising as the population expands (World Bank, 2002). This has maintained Bangladesh as the world's most densely populated country (excluding city states) in which almost 83 percent of the population lives on less than US$2 per day and 36 percent on less than one US$1 per day (UNDP, 2004). The combination of these high levels of poverty and population density create a context in which the ability to respond to health issues can become circumscribed. The implication this may have on the adoption of self-care has not been fully considered to date.

3.3 Economy

In contrast to the country's current economic climate the region was highly prosperous from the 13th Century and the period of the Mogul Empire. Fertile soil, tropical climate and an abundance of fish, fruit and wildlife assisted in the development of an agrarian economy and the growth of Dhaka into a major commercial centre (Zaman, 2005). However, the 17th Century arrival of the British Empire gave rise to deleterious effects on the economy and skewed development. Traditional feudal relationships were broken, textile productions were shut out of the British market to protect their own industrial manufacturing and Calcutta was developed as the South Asian commercial and administrative centre (Zaman, 2005).

Further neglect of the economy ensued under Pakistani rule after the partition of British India leaving economic turmoil for the new government of independent Bangladesh in 1971. Initial reforms failed and high levels of inefficiency and corruption hampered national sector performance. Privatisation and liberalisation policies were encouraged

under military rule as well as increased dependency on foreign aid. Despite some private sector growth, adoption of modern technology in agriculture and the development of the garment industry, inequity in asset and income distribution have also increased. Therefore the steady growth of GDP has not borne witness to any trickledown effect and incidence of poverty remains extremely high. The growth in labour exports to Gulf and South-East Asian nations, which enables households to earn remittance income, along with extensive micro-finance provision offers the potential for positive impacts. However, the current global economic downturn and ongoing political problems are likely to cancel out these developments leaving the economy in a perilous situation. These macroeconomic constraints may also filter down to the household, negatively affecting their ability to cope with the ongoing burden of illness and potentially influencing the likelihood of self-care adoption in managing disease risk and response.

3.4 Household Dynamics, Gender and Social Relations

A third of the population live in extreme poverty referred to as the 'hardcore' poor[18] who are more likely to be without assets, relying on their labour, and lacking basic health, education and economic opportunities (DFID-B, 2002). They make up part of the landless poor, who own at most 0.05 acres, representing 48 percent of the rural population located in 68,000 villages across the country (Zaman, 2005). These villages usually consist of between 400-1000 people comprising a group of homes referred to as paras. Villages are close knit communities as a vast majority of households are made up of families involved in some degree of resource sharing (Jansen, 1999). The family has a highly functional and extremely important role to play in both rural and urban Bangladesh society. It acts as an integrated unit in all social and economic activities and provides a vital support system in times of individual crises, which includes responding to family members' ill health (Zaman, 2005).

This context has implications for the examination of self-care in terms of responding to illness within a community setting. Self-care can be assessed at both the individual and

[18] This terminology refers to people who experience extreme poverty and because of a lack of opportunities for upward mobility are likely to experience poverty throughout their lives (Matin & Halder, 2002). The terms 'ultra poor' and 'poorest of the poor' are also applicable in descriptions for this segment of Bangladeshi society primarily categorised through food consumption <1805 kcal per capita per day (BIDS, 1992). They are also likely to have very few or no assets, are highly vulnerable to shocks caused by natural hazards and/or illness and predominantly depend on wage labour as a source of income (Matin & Halder, 2002).

household level and although the experience of an illness is very much at the individual level, the way persons respond to this experience is frequently as the member of a household utilising the resources and coping strategies available at this collective unit (Goudge & Govender, 2000). Important decisions in relation to health seeking behaviour are included in this process as highlighted by Zaman (2005) "Any important decision in the life of an individual, like…choice of treatment of disease is made with the consultation and consent of other family members" (p.48). Therefore, the locus of analysis for this thesis will be the rural household in relation to adoption of self-care. However, this is problematic due to the complexity and changing nature of intra household relationships that frequently exist. The household can have many external links through migration and employment and may employ non-family members as permanent labour, making it difficult to define who exactly constitutes household membership (Wallman & Baker, 1996). A lack of unanimity exists within literature concerning both the concept of the household and its application in research. This is emphasised by the varying number of definitions outlining the household as a place, mode of social organisation, a cluster of functions or a combination of these characteristics (Berman et al, 1994). For the purposes of this research, the household is defined not as a residential unit but as a system of resources which extend into communal, informal and formal domains allowing the family to act as one integrated unit in social and economic activities. Thus, it is defined as the "basic unit of production, reproduction, consumption, and of social, ceremonial and political interaction" (Jansen, 1999, p. 58)[19].

Within the household unit women invariably have lives centred on traditional mother and housewife practices which are largely shaped by the wider patriarchal social system. This can limit their access to employment, education, health care and local government. The practice of Purdah (the seclusion of Muslim women[20]) is also widely enforced in many areas of the country adding to the seclusion and subordination faced by many women in Bangladesh. Although changes are taking place through education

[19] Within Bangladesh there are a series of social units at different levels in the village consisting of the *ghor* (hut in which the nuclear family sleeps and keeps its belongings), *chula* (those eating from the same hearth or fireplace) and the *gutsi* (patrilineal family) which can play an important role for certain purposes of the household (Jansen, 1999). As it is necessary to examine a unit for analysis where income and assets are grouped together, the *chula* will be utilised as the level of household for this thesis.

[20] *Purdah* has shifting meanings contextually and historically. Here it refers to the seclusion of women. However, norms can be flexible depending on the class and economic situation of the women and their family.

and women focussed NGO activities, women are less visible and active in public spheres compared to many other cultures (Zaman, 2005). Women also experience a disproportionate degree of underdevelopment compared to men. This is exemplified through a lower life expectancy (55.4 years compared to 56.4 years for men), considerably lower calorie intake (1,599 kcal compared to 1,927 kcal for men) and significantly lower levels of literacy (24.2 per cent compared to 45.5 per cent for men over the age of fifteen). Perhaps most crucially the gender difference is emphasised within the wages rates of households earning less than 100tk[21] per week. Almost 43 percent of women fall into this category compared to only 8 percent of men (Murshid, 1995).

A social hierarchy also exists that is not present to the same extent in many other societies. Traditional social distinctions according to family lineage can often be observed within Bangladesh for use in political matters and social mobility. Although this practice is declining, hierarchies based on wealth and political influence are now saliently embedded throughout Bangladesh society. Distinctive classes have emerged into a model of social stratification used by Bangladeshi people describing "*gorib* (poor), *chotolok* (lesser people), or *Murkhu* (ignorant)…*dhoni* (opulently rich), *borolok* (big shot) or *bhodrolock* (noble people)" (Zaman, 2005, p. 50). The first three categories include the landless, small traders and menial labourers, all of whom are perceived to have inferior social status. Landlords, business men, private sector and government workers are grouped in the latter three categories. Although there are blurring boundaries and subtleties to these forms of ranking, the issue of class stratification remains and can be found "in both casual conversations and official inquiries in which persons are categorised by reference to such indices as income, academic degree, skin colour and birth order in the family" (Zaman, 2005, p. 50). The role of self-care and the adoption of this practice are likely to be shaped, influenced and manifested by all these cultural and societal factors in Bangladesh.

3.5 The Local Context

Moving beyond the macro level to a detailed review of the local context is necessary in terms of understanding the immediate environments in which self-care decision making

[21] Taka(tk) is the national currency of Bangladesh, at the time of writing the conversion rate was £1 = 112taka

and practices can take place. Research was primarily undertaken in two locations in North West (Domar) and south east Bangladesh (Chakaria) with a third location (Matlab) accessed for survey work only. Site selection and justification are outlined in detail in the following chapter (Section 4.2). However, at this juncture details are provided on the local context of each field site in terms of health care provision, socioeconomic demographics and livelihood practices which may be influential in the adoption of self-care.

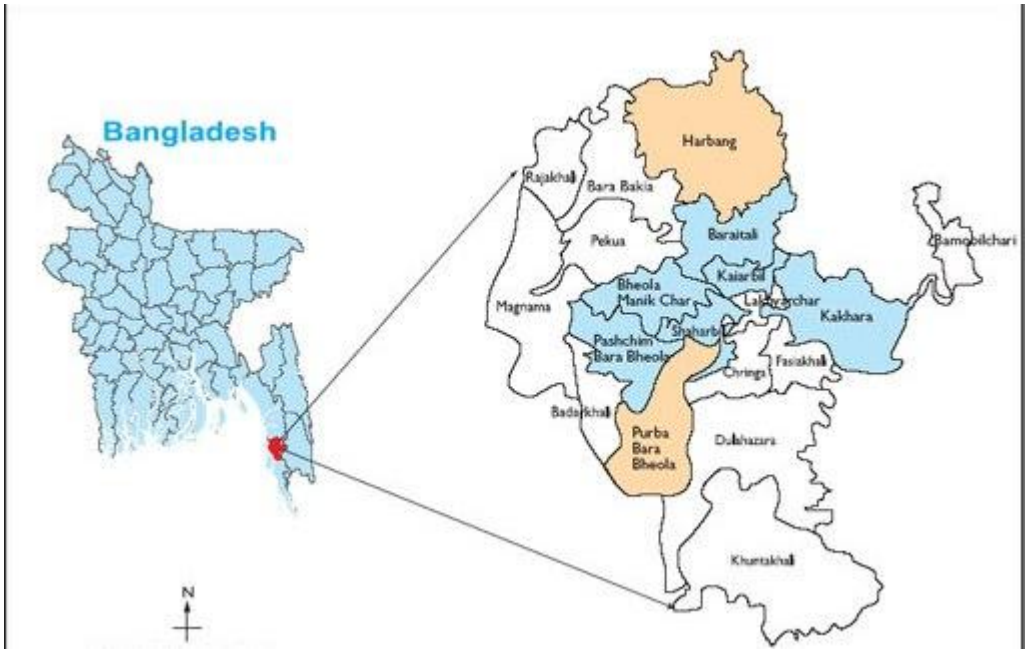
3.5.1 Chakaria

Chakaria is located in Cox's Bazaar district which is situated in the south east of Bangladesh on the coast of the Bay of Bengal. The district itself is bordered to the north by Chittagong District, on the east by Bandarbarn District and Myanmar (Burma) on the south. Chakaria is the biggest Upazila[22] in Cox's Bazaar District in terms of both land area and population size. Tropical monsoons and heavy rainfall typically characterise the climate of Chakaria from May to September with the remaining months experiencing mainly dry weather. Due to the Upazila's location on the Bay of Bengal the area is highly susceptible to cyclones and tidal flooding (Bhuiya et al, 2002). As a consequence the region has received some external assistance through the efforts of various NGOs to improve road infrastructures and construct cyclone shelters. Despite these forms of intervention and increased focus on the area due to its vulnerability to environmental hazards, Chakaria is still one of the poorest performing Upazilla's in terms of health and family planning (Bhuiya et al, 2002).

The main occupations in Chakaria are within agriculture with approximately 53 percent of households dependent on this industry as the predominant source of income. Other sources of income include non-agricultural labour (7.8%), business employment (15.1%), general employment (6.7%), construction (1.1%) rent and remittance (1.13%), industry (0.7%), religious services (0.2%) and transport and communications (2.9%) (BBS, 2006). Traditional agricultural methods that have been utilised for centuries remain in use to the present day. Crops such as rice, millet, jute, pulses, oil seeds, potatoes, wheat, onions, chillies and turmeric are cultivated in the region. Rice cultivation occupies the majority of arable land while jute, a cash crop, is in decline.

[22] Upazila is an administrative unit in Bangladesh; it is essentially a sub-district with a population of approximately 250,000. There are 397 Upazilas in Bangladesh and the majority of government activities are concentrated at this level, including health care delivery (Rahman, 2000)

Figure 3.2 Map of Chakaria



Source: ICDDR, B, 2007

The number of people earning a living through traditional occupations is declining as people move into business and service sectors (Hanifi et al, 2009).

Generally living conditions are poor, families live in houses that are made from natural materials such as leaves and straw containing one or two rooms and a kitchen area. Financial security is low, reflected in the average income which is 125 taka per day (Wahed & Mahmood, 2009). This equates to approximately £1.13 pence. Ninety nine per cent of households' access tubewell water as their source of drinking water, almost 78 percent of households are without sanitation facilities and less than 10 percent of households have access to electricity in the Upazila (Hanifi et al, 2009). Communication systems include a bus route running north of the Upazila to Chittagong city and south to Cox Bazaar town. Village pathways and small paved and un-paved roads provide other transportation routes for buses, vans, three wheel taxis, rickshaws and bicycles. Approximately one quarter of households in the area are members of NGOs which predominantly provide some form of micro-credit. However this is a lower concentration compared to the rest of the country (Hanifi et al, 2009). As in the majority of rural areas in Bangladesh women are generally occupied in the Bari with

household chores and child care responsibilities. Table 3.1 provides an outline of the major demographic and socioeconomic characteristics of Chakaria.

Table 3.1 Chakaria Upazila Statistics

Characteristics	2001
Area	248.44 square miles
Number of Households	
Upazila	84,434
Rural	76,241
Urban	8,193
Household Size	
Upazila	6
Rural	5.9
Urban	6.2
Population	
Both	503,390
Male	260,146
Female	243,244
Rural Population	
Both	452,397
Male	233,139
Female	219,258
Urban Population	
Both	50,993
Male	27,007
Female	23,986
Literacy (7 years & over)	
Both	32%
Male	35.1%
Female	28.8%

Source (BBS, 2009)

3.5.2 The Research Village: Muhuripara

Muhuripara is located in Kayirbil union within Chakaria Upazila in Cox Bazar district. The village contains just over 200 households accommodating an exclusively Muslim population of approximately 1,100. The majority of people in the village (74%) are dependent on agriculture and labour activities as their source of livelihoods (Ray-Bennett et al, 2010). A vast proportion of households are situated in low lying areas close to the river Matamuhuri, which regularly causes flooding following heavy rainfall

during the monsoon season. Privatisation of the river water, poor water outlets and river erosion have also been blamed for flash flooding which can occur throughout the year in low catchment areas where part of Muhuripara is situated. Although the physical topography of the village also contains some areas of higher ground which are not at risk from flooding, the majority of households, both rich and poor, are located in the more fertile low lying areas. The areas of higher ground contain some of the poorest households, but are often a place of refuge for the displaced in the absence of cyclone and flood shelters in the village.

3.5.3 Domar

Domar Upazila is located within Nilphamari District in northeast Bangladesh. The district covers an area of 1640 sq km and is bounded by Kuchbihar district of West Bengal India to the north, Rangpur district on the south, Lalmonirhat district on the east and Punchagarh and Dinajpur districts to the west. The proximity to India is reflected in the relatively high Hindu population (20%), which is higher than the national average. Domar Upazila covers an area of 250 sq km which encompasses a current population of 215,699 and is the smallest in the district. One government hospital, ten family welfare centres and eight satellite clinics represent the main government provision of health facilities while some others are offered by NGOs working in the region (BBS, 2009). The main municipality is also called Domar and has a population of just over 17,000. Climatic variation occurs in temperature during the course of the year, reaching a maximum of 33 degrees Celsius during summer months but cooling to 10 degrees Celsius during the winter. Annual rainfall is slightly lower than the national average at 2931mm which can have a detrimental impact on the local environment through protracted droughts affecting both local agricultural livelihoods and food security.

Agriculture (53%) is the main source of income in Domar through the cultivation of rice, wheat, jute, mustard and a small amount of vegetables such as potatoes and pumpkins. Partial and seasonal employment is also very common within the agricultural sector. Occupations for men include farming, vegetable selling, rickshaw/van driving and some waged employment in Domar. For women, paddy husking, kantha stitching, vegetable growing, chicken rearing, cow herding and some domestic help are the main sources of income. A small commerce and business sector exists in this part of the country involving approximately eight percent of the local population (BBS, 2009). However, many households have no rights to the land they work on as the vast majority

belongs to a small number of landlords. This leaves many households in a highly vulnerable position as they can be forced from the land if it is required for alternative purposes.

Living conditions in Domar can be some of the poorest in Bangladesh. The vast majority of families live in houses made from natural materials. The number of people with access to a sanitary latrine is only 18.3 percent (Health Security Survey, 2009). Communication systems include a bus route running north to the Indian border and south to the town of Nilphamari and further south to Rangpur. Village pathways and small paved and un-paved roads provide other transportation routes as they do in Chakaria. However, the amount of traffic is considerably less, while van rickshaws are the most frequently utilised form of transportation. As Domar is one of the poorest Upazilas in one of the poorest districts of Bangladesh the area receives some external assistance through various NGO involvement. The main focus of this support is from micro-credit initiatives, some health and sanitation projects and gender equity programmes. Despite these forms of intervention, Domar remains one of the most impoverished Upazilas in Bangladesh. Table 3.2 provides an outline of the major demographic and socioeconomic characteristics of the Upazila.

Table 3.2 Domar Upazila Statistics

Characteristics	**2001**
Area	250.84 square miles
Number of Households	
Upazila	33,490
Household Size	
Upazila	6.2
Population	
Both	215,699
Male	110,006
Female	105,692
Literacy (7 years & over)	
Both	39%
Male	46.5%
Female	31.2%

Source (BBS, 2009)

3.5.4 The Research Village: Chikkonmati

Chikonmati is located approximately 3 kilometres from Domar town and covers a huge area of land through the sparse location of paras. The result of this geographical spread means that those houses located at the most northerly point of the village are five or six kilometres from Domar town. Chikonmati is one of the largest villages in Domar Upazila with almost 400 households. It also exhibits high levels of poverty as sanitation and housing conditions are very poor, although safe drinking water can be regularly accessed through a network of tubewells available within the village. The vast majority of households are dependent on agriculture and labour activities as a source of livelihoods, much of which is seasonal.

3.5.5 Matlab

Matlab Upazila is located in Chandpur District in central Bangladesh. The main town of the Upazila is also called Matlab and is approximately 50 kilometres southeast of the capital Dhaka. Two major rivers, the Ganges and the Meghna, run through the delta in which Matlab is situated leaving the area highly vulnerable to seasonal flooding. The population is approximately 220,000 (BBS, 2009) who are primarily engaged in agricultural and fishery industries. Traditional techniques continue to be used to manage millet, jute, potatoes, wheat, chillies, turmeric, pulses and oil seeds. These are regularly cultivated alongside the main crop rice. However, many traditional occupations are in decline while a business and services market has expanded over the past twenty years. More recently the advent of globalisation has given rise to increased migration abroad, particularly to the Middle East. Employment in construction and other physical labour jobs provides valuable remittances for many households in this part of Bangladesh (Siddiqui & Abrar, 2003). As with the two other research sites, women generally do not have any formal paid employment but stay in the home providing care for children and tending to household chores.

Health care provision in Matlab is heavily complemented by services supplied by the Bangladesh NGO ICDDR,B. The organisation has been collecting health and demographic data in the area since 1966 and delivered extensive health services to certain areas of the Upazila (Ross, 1996). Large scale trials on the efficiency of population-based health interventions have been conducted over the past fifty years

within Matlab. The trials have included epidemiological studies on diarrhoea, cholera vaccines and behavioural and demographic studies. Through these initiatives a 'comparison area' and 'treatment area' were demarcated within Matlab creating a unique 'human laboratory.' In both areas government health services are available but in the treatment area additional Maternal and Child Health and Family Planning are provided by ICDDR,B along with an extensive CHW network and post natal care services. A hospital has also been established providing emergency care and specialising in cholera treatment, nutritional rehabilitation and diagnostic services (Bosch, 2005). Inhabitants of the treatment area therefore have considerably greater access to health facilities and health education dissemination to the extent that Matlab is often regarded as unrepresentative of rural Bangladesh and other developing countries (Ross, 1996). This issue is addressed in further detail in regards to the methodology of this research in Chapter 4 (section 4.13).

Specifically, Matlab offers a contrasting environment in which self-care may take place compared to both Domar and Chakaria as a result of the extended health service provision and prolonged flooding which takes place in the region. Although flash flooding and some seasonal flooding is a regular occurrence in Chakaria, the geographical location of Matlab at the tributary of two major rivers (Ganges and Meghna) often results in sustained seasonal flooding for up to two or three months each year. In contrast, Domar is susceptible to periods of drought while Chakaria is at risk from cyclones due to its location close to the coastline on the Bay of Bengal. These three field sites offer potentially interesting insights into the manner in which self-care is adopted in differing locations. However, it is important to note that a spatial study of self-care is not the driving force in location selection for this research. Instead it is hoped the study of self-care across three differing areas will enrich the examination of self-care and its outcomes. Further justification for field site selection is outlined in Chapter 4, section 4.6

3.6 National Health Profile

Extensive levels of poverty throughout Bangladesh are reflected in relation to health through a comparison between health development indicators with other countries in South Asia, as outlined in Table 3.3 below. The full extent of health and population indicators for Bangladesh is presented in Table 3.4.

Table 3.3 International Comparisons of Selected Health Development Indicators

Indicator	Bangladesh	China	India	Thailand	Vietnam
Population Growth	1.6	1.1	1.8	1.2	1.8
Male Life Expectancy	58	68	62	70	66
Infant Mortality: per 1,000 live births	73	31	70	29	34
Under 5 Mortality: per 1,000 live births	96	36	83	33	42

Source: World Bank, (2002)

Table 3.4 Bangladesh Health and Population Indicators

Population Density / sq km	834
Sex Ratio (Male : Female)	103.8
Contraceptive Prevalence Rate	54%
Maternal Mortality Ratio per 1,000 live births	3.15
Antenatal Care Visit	33 %
Assisted Delivery by Health Professional	12 %
Exclusive Breast Feeding < 4 Months	52.8%
Undernourished people	35% of population
Underweight (weight for age)	47.7 %
Stunted (height for age)	44.7 %
Estimated Number of TB cases per year	300,000
Estimated Number of HIV Positive Cases	15,000
Per Capita Health Expenditure	$ 47
Physicians per 100,000 people	20
Public Health Expenditure	1.5 % of GDP
Private Health Expenditure	2.6 % of GDP

Source: BRAC (2004), UNDP (2003)

As both tables indicate, the health status of the population in Bangladesh remains poor, especially in comparison to other developing countries in South Asia. However, there have been several notable improvements in certain health indicators since the country achieved independence, mainly as a result of large scale government and NGO programmes such as oral rehydration therapy (ORT), tuberculosis programmes, arsenic mitigation campaigns and widespread immunisation initiatives (Khan, 2001; Mahmud, 2004). The average total fertility rate has fallen from 6.3 in 1975 to 3.4 in 1998. The rate of natural population increase is close to replacement level and the contraceptive prevalence rate has remained high (Vaughan et al, 2000). Human Development Index (HDI) increased at an average of 8.8 percent per annum during the 1990s (BDHDR,

2001) and the country is well placed to meet MDGs related to child malnutrition and mortality (World Bank, 2005).

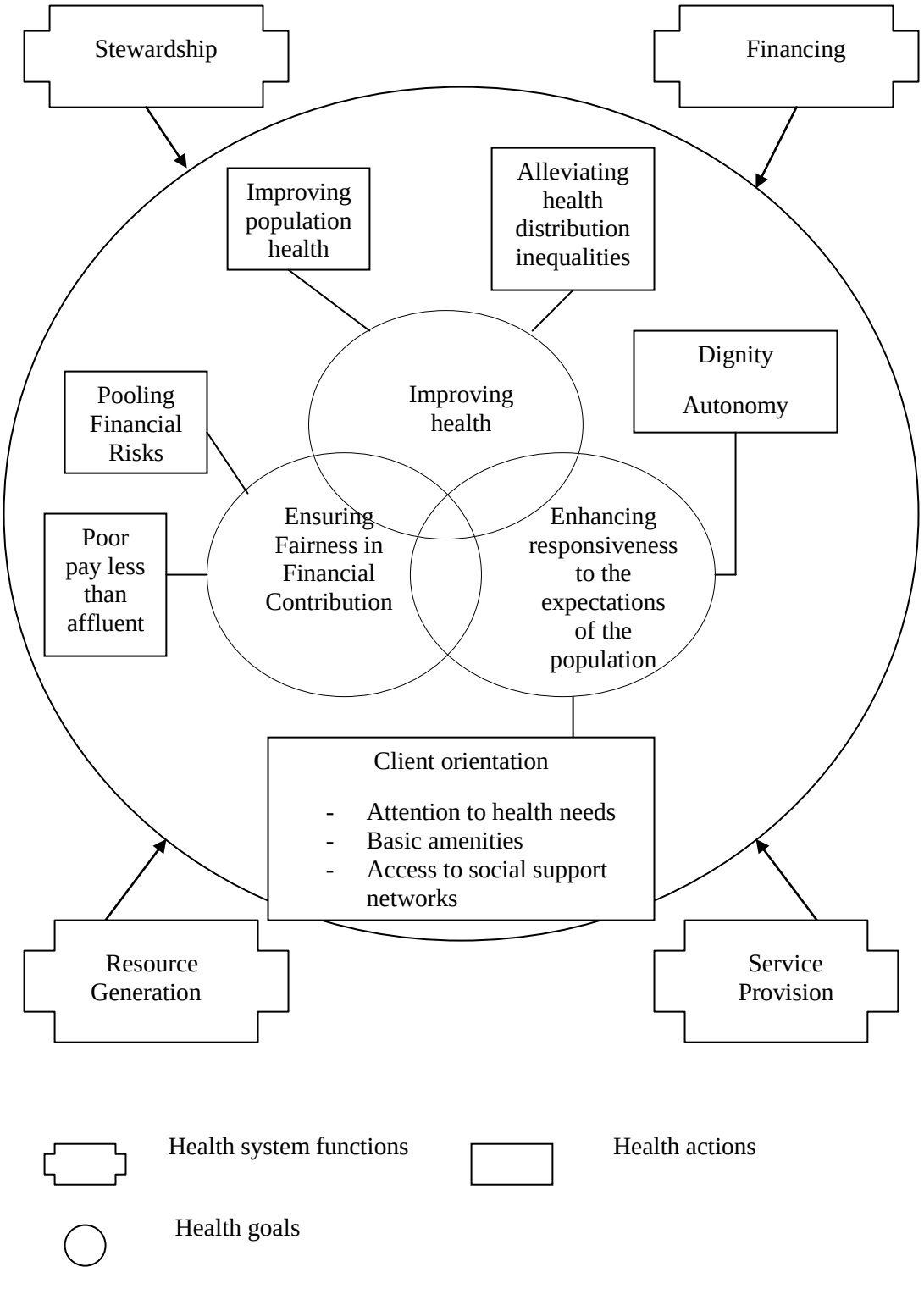
Although certain advances have been made, numerous problems exist at alarming levels. Three quarters of women do not receive antenatal assistance or care from a trained attendant, which is reflected in some of the highest rates of maternal mortality in the world (3.2 per 1,000 live births) (Karim et al, 2003; NIPORT et al, 2003). Infant mortality rates continue to be unacceptably high, accentuated by high levels of infants born under the threshold for low birth weight (more than one third). The high proportion of child deaths are also caused by poverty related infectious diseases, with the majority of mortality and morbidity rates stemming from diarrhoeal disease, acute respiratory infections, malnutrition and neonatal conditions (Baqui et al, 1998; Khan, 2001; WHO, 2001). Non-communicable diseases and chronic conditions such as diabetes, arthritis, cancer and cardiovascular disease are rising (Adjuik & Smith, 2006). An increasing elderly population (doubling from current levels to 14 million by 2020) also adds to a continued rise in many chronic conditions and presents an added burden on current insufficient health services (Biswas et al, 2006). Additional health problems reside in continuous environmental degradation through deteriorating living conditions (Gwatkin et al, 2000). This includes a lack of sanitary facilities at the household level. Only 48 percent use sanitary excreta disposal (UNDP, 2004) and there is arsenic poisoning of tube-well drinking water throughout the country (Smith et al, 2000).

Bangladesh is also severely affected by the burden of infectious disease, particularly diarrhoeal disease, as noted previously in Chapter 1. The perpetuation of these problems within Bangladesh along with the country's poor health record makes health protection and disease management among the most important development issues for both public and private sector organisations. The salience of these issues was highlighted by a sector wide evaluation of the national Health and Population Programme stating a failure of the system to deliver a pro-poor service (Cockcroft et al, 2004). This is also a pertinent reason to address the continuing problems within the health sector through research to identify systems, interventions and policy to alleviate the burden of ill health for the impoverished population of Bangladesh. However, prior to an examination of the Bangladesh health care system it is important to explore the goals and function of health systems more widely.

3.7 Health Systems

According to the WHO (2000b) health systems are designed to promote, restore or maintain health. This is based upon three fundamental objectives; to improve the health of the population, respond to people's expectations and provide financial protection against the costs of ill health (WHO, 2000b). This is diagrammatically represented below in Figure 3.3. Access according to need and equal access for all are also important principles that should determine the nature of health system organisation to attain these ideologies of treatment provision (Bunker, 2001). This holds particular value when considering the numerous other socio-economic, biological, environmental and behavioural factors that can affect health, in addition to the role the health system can play in promotion, restoration and maintenance of health. However health systems have particular potential to offer additional benefits and protection for the poor in terms of the economic and opportunity costs associated with health service utilisation (Rannan-Eliya & Somanathan, 2005) and achievement of the health related MDGs (Gwatkin, 2005). However, to attain these poverty reduction objectives, health systems must be in a position to sustainably provide cost-effective services of an acceptable quality. It is suggested that they would ensure resource generation and financing through taxation, insurance schemes and out-of-pocket expenditures. They would provide coordination through appropriate policy formulation and effective monitoring and evaluation mechanisms (Ensor et al, 2002; Yazbeck & Gwatkin, 2005). The extent to which this has been achieved in Bangladesh will be discussed in section 3.9 following description of past medical developments in Bangladesh. This is followed by an outline of the current health system in the country, including public, private and traditional medicine sectors.

Figure 3.3 Action Based Perspective of Health Systems



Source: Damme et al, (2004)

3.8 The Development of Medical Care in Bangladesh

The historical development of medicine in south Asia underscores the development of medical pluralism in Bangladesh. Two predominant medical traditions have been widely recorded; the Ayurvedic sector which originated within the Hindu religion and predominantly practiced and controlled by royal authority in India. The second tradition comprised a configuration of beliefs and practices which combined elements of humoral theories and magic. Although distinct these two traditions influenced each other rather than operating in isolation. Further developments occurred in the twelfth century in the form of Unani medicine following the arrival of Muslims to India, while the sixteenth century witnessed the introduction of modern western medicine through European colonisers (Zaman, 2005). Later biomedicine began to dominate the medical picture through the growing influence of British colonisers and Christian missionaries. The latter offered biomedical treatment to those they wished to convert, while the British sought to protect themselves and the indigenous labour force from infectious disease (Zaman, 2005). Modern western medicine gained increased popularity and started to reach a wider population during the middle of the twentieth century.

Physical infrastructure for health care delivery was put in place by the government following the end of the Second World War until the early 1970s. Although there was a strong urban bias in facilities' location, efforts were also made to establish rural health services and the concept of decentralisation was affirmed through the Government's decision to recognise Primary Health Care (PHC) by the beginning of the 1980s (Rahman, 2000). More recently the western medicine concept of homeopathy has also gained prominence in south Asia and efforts have continued to expand health infrastructure (Nahar, 2007).

All categories of medicine described above are presently available throughout Bangladesh and fall into one of three sectors of healthcare. Firstly, the popular sector which consists of home remedies, self-treatment and many elements of what has been identified earlier in this thesis as self-care. As such health advice in this sector is mainly obtained through kinship and friendship ties. Secondly the professional sector consists of legally sanctioned and established healing professions, including modern biomedicine. This is in contrast to the third sector, the folk sector, where specialised healthcare providers are not legalised. The practice of folk medicine is predominantly

found in developing countries and is also referred to as complimentary or alternative medicine which can be either sacred, secular or a combination of the two (Kleinman, 1980; Helman, 2007). Ayurvedic, Unani and Homeopathic medicines joined biomedicine as part of the professional sector in the 1970s through their legalisation and the establishment of formal institutions to train practitioners. However, there remain a substantial number of people practicing forms of traditional medicine without proper institutional approval, particularly in rural areas of Bangladesh (Nahar, 2007). As Bangladesh society has developed so too has the country's healthcare sector. The current transition from tradition to modernisation is acutely reflected in the makeup of the current health care system and health care provision as discussed in greater detail in the following section.

3.9 Bangladesh Health Service Provision

Health care provision in Bangladesh is highly pluralistic offering a number of differing treatment options for the population. Recent evidence has documented a decline in the percentage of treated acute illness within the public health sector from 20 percent in 1984 to 12 percent in 1995, suggesting that medical pluralism within Bangladesh may be increasing (Begum, 1996). This is reinforced by the growth of indigenous systems of medicine and the use of traditional medical practitioners as the preferential means of health treatment (Killingworth et al, 1999, Zaman et al, 2004). Within the plethora of treatment options available, extending from folk to allopathic medicine, are a range of formal and informal health care providers including non-governmental services, government health facilities, and private and traditional practitioners. An outline of the various health care providers is presented in Table 3.5 below. The three major health sectors widely portrayed in the literature (public, private and traditional) are covered in more detail in the following sections.

3.9.1 The Public Sector

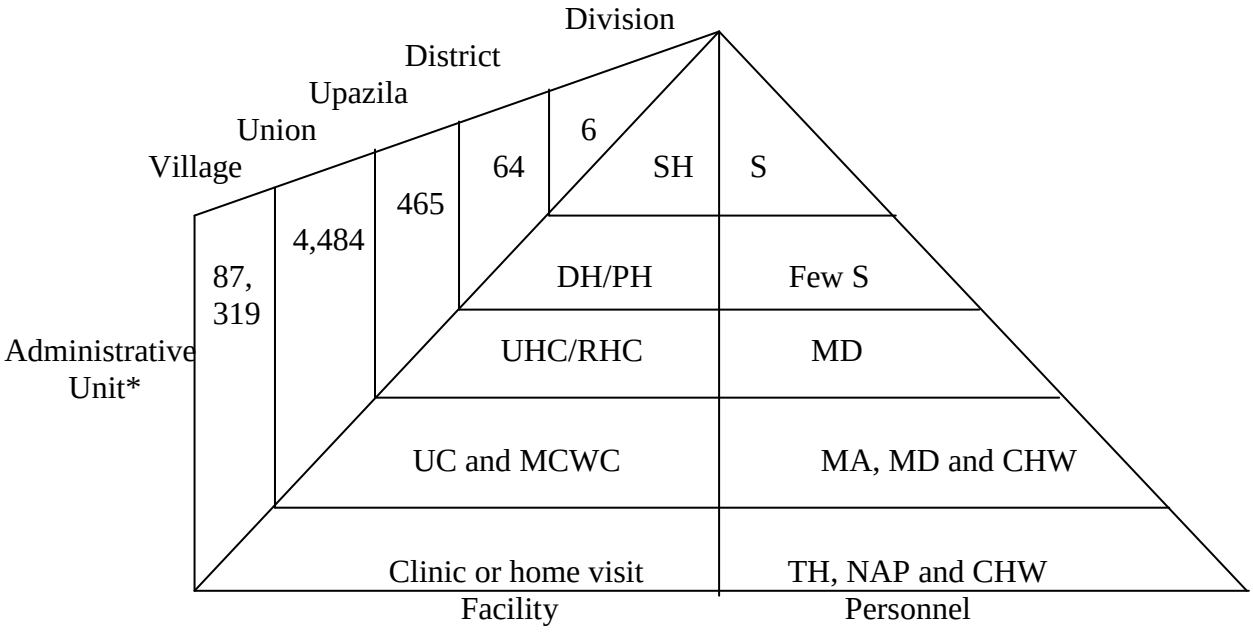
Provision of health services by the Government of Bangladesh is a highly centralised and vertical system controlled through the Ministry of Health and Family Welfare (MOHFW) which has overall responsibility for health sector policy and planning within Bangladesh (Khan, 2001). The hierarchical structure of governmental services is diagrammatically outlined in Figure 3.4, which follows the administrative pattern of the country.

Table 3.5 Types of Healthcare Providers in Rural Bangladesh

Provider	Training	Type of services provided	Health sector
Qualified allopathic provider (Doctor, Nurse)	Professional medical training, normally lasting six years enabling the individual to practice medicine as a fully qualified doctor under the title of MBBS	Predominantly curative services and some training of other health workers	Public / Private – formal sector
Medical Assistant/ Community medical officer	3 years training in government Medical Assistant Training School	Allopathic, curative	Public / Private – formal sector
Family Welfare Assistant	One and a half years training in both government and some private facilities on midwifery and clinical contraception management	Conducting normal delivery; clinical contraception and immunisation services	Public / Private – formal sector
Traditional Birth Attendant	No training or short training on safe and clean delivery by government or NGOs	Assisting normal delivery	Private – informal sector
Community Health Workers	Training on basic curative care for common illnesses, minor ailments and preventative health measures. The duration and intensity of training ranges from three weeks to three months, with a number of required refresher courses	PHC provided at the local level through community clinics or direct to households for both government and NGO health care programmes	Public / Private – formal sector
Drug store seller / Quack	No formal training in dispensing medicines or in diagnosing and providing treatment.	Allopathic	Private – informal sector
Village Doctors (Rural Medical Practitioners / Palli Chikitsoks)	Largely untrained and unregulated health care providers. Some have received three to six month training programmes provided by private organisations. One year formal training programme provided by the government was disbanded in 1982	Allopathic	Private – informal sector
Homeopath	Predominantly self-educated, some posses recognised homeopathic qualifications from government of private medical colleges	Homeopathic	Public / Private both formal and informal sectors
Traditional	Mostly self-trained, although a small number may have training from government or private colleges of Ayurvedic medicine. Spiritual, religious and faith healers have no formal training	Combination of ayurvedic, unani, faith healing and non-secular; based on religious belief	Predominantly private – informal sector. Some formalised private sector practise

Source: Bangladesh Zaman et al, (2004); Ahmed (2005); Bangladesh Health Watch (2008)

Figure 3.4: Formal Health Care Structure in Bangladesh



TH = Traditional healer NAP= Non qualified allopathic practitioner
CHW = Community Health Worker, UC= Union Health and Family Welfare Centre
MCWC=Maternity and Child Welfare Centres
MA= Medical assistant MD= Doctor with graduate degree
UHC= Upazila health complex RHC= Rural health centre
DH= District hospital PH= Private hospital
SH= Specialist hospital S= Specialist
* There are a further 42 sub-districts in four city corporations

Adapted from Paul (1999), Source: Ahmed (2005); Bangladesh Health Watch (2008)

The government system adopted the PHC approach since inception of the Alma Ata declaration in 1978 as the guiding principle in health service development. PHC is implemented across all administrative levels; national, district, Upazila and union, respectively. Overall coordination of activities and policy occurs at the national level that leads to the provision of technical, administrative and supervisory support at district levels. Curative care is provided from the Upazila level down, offering specialists in obstetrics, gynaecology, medicine, surgery, and promotive and preventive health measures disseminated by a range of health personnel. This structure is reinforced at union level by the activities of family welfare workers and the promotion of health services within the community established through the activities of community health workers (WHO, 2004). The benefits of this approach are reflected in figures showing higher use of the public health care sector for preventive care, in addition to in-patient treatment. The more heterogeneous private sector is predominantly accessed for outpatient curative care (World Bank, 2003).

There has been important investment by the GoB over the past thirty years, complemented by a significant amount of donor assistance, to strengthen existing rural health care facilities. The provision of medical colleges which serve a number of districts and have provision for up to 650 beds, and district hospitals with 50-100 beds, both provide secondary care and national tertiary level facilities.

Additional investment has been geared towards the construction of 400 Upazila health complexes[23] (UHC) which are supported by at least two or three union sub-centres, referred to as Union Health Centres (UHC) and Family Welfare Centres (FWC), respectively. The former is normally staffed by ten qualified allopathic practitioners and supporting staff to manage 31 in-patient beds and basic laboratory testing facilities. The latter are usually staffed by paraprofessionals including medical assistants and trained midwives. In both cases the health facilities offer ambulatory care (GOB, 1998). Further down the hierarchical structure lies a cadre of CHWs operating at the Union level. Three male health workers provide preventative health care services to households every two months, while three female family welfare assistants supply family planning support to homes. Both forms of CHW are supervised by a health inspector and family planning inspector who are male and based at the UHC (Ahmed, 2005). This decentralised structure with a grassroots focus on health delivery now reflects current health policy established in the National Health and Population Sector Programme (1999-2003).

The extensive development of these rural health services were intended to integrate curative, preventive and promotional activities by combining services in the clinics with outreach programmes to meet the needs of the surrounding population. However, less than 40 percent of the population has access to basic government health care services implying that the fundamental health needs of significant numbers of the population remain unmet (World Bank, 2003; Mercer, 2005). This problem has been exacerbated by a lack of required health sector investment (Ensor et al, 2002) which has also detrimentally affected current levels of service provision. Service quality appears to have significantly deteriorated as reported in both research reports and the popular

[23] This is the apex of rural based government health facility provision offering in-patient, out-patient and emergency services in conjunction with both preventive and simple curative treatments. The UHC, formerly referred to as the Thana Health Complex, also provides referral services to regional and tertiary level facilities (WHO, 2004).

media citing a shortage of staff at all levels, inadequate facilities, lack of essential supplies and medications, perceived poor quality of staff and services, and inefficient management (Andaleeb, 2000; Aldana et al, 2001; Chaudury & Hammer, 2003; Byron, 2004; Cockcroft et al, 2004; Zaman, 2005). Resource and administrative problems are compounded by the emergence of informal and unofficial fees that can amount to ten times the official charge for health care utilisation (Nahar & Costello, 1998; Killingworth et al, 1999). Combined together these issues have led to a gradual decline in service use from 17 percent to 13 percent between 2000 and 2003 (Cockcroft et al, 2004).

Government health service delivery is also hamstrung by a combination of personnel problems including an ongoing 'brain drain' of qualified health care professionals (Hossain & Begum, 1998; Paul, 1999; Mercer et al, 2005), which has resulted in 26 percent of professional posts remaining vacant in rural areas (Chaudhury & Hammer, 2003). This is compounded by high rates of absenteeism of approximately 40 percent among health professionals, particularly doctors, in rural areas (Chaudhury & Hammer, 2003). Additionally, qualified practitioners working in the government sector often establish private practices. This can result in the referral of patients seeking government health services to the more expensive private service where they will receive more comprehensive treatment (Zaman, 2005). As this invariably comes at a higher price, it places excessive cost burdens on the poorest members of society.

Criticisms have therefore been targeted at the health system for perpetuating a highly inequitable system that exposes the poorest and most disadvantaged people to high levels of financial risk. The risk is often expressed in terms of expenditures funded by out-of-pocket payments by the household (Whitehead et al, 2001; McIntyre et al, 2005; Rannan-Eliya & Somanathan, 2005). This is a situation which is in contrast to the underlying aim of health systems, designed to provide a pro-poor health service that will surmount the widely documented problems of the 'inverse care law[24].' This has become particularly problematic for the GoB as the provision of most services are promoted to be free of charge, although evidence suggests that 82 percent of government service users had to make some form of payment (Cockcroft et al, 2004).

[24] This specifies that availability of quality health care is liable to vary inversely with need for health services amongst members of the population most likely to require access to health facilities (Jones & Moon, 1987; Hart, 2004; Yazbeck & Gwatkin, 2005)

This may be a key factor in the under-utilisation of many government facilities as individuals simply cannot afford to pay for treatment (Russell, 1996, Pryer, 1989). The government has responded to these shortfalls and gaps in health service provision by contracting NGOs[25] to work in specific underserved areas to conduct a variety of services in disease control, immunisation programmes, tuberculosis treatment and arsenic mitigation efforts (Chowdhury, 2002). However, the widespread levels of health system deficiencies exemplified through inadequate provision of basic-amenities, insufficient provision of trained health personnel and inappropriate client-provider interactions has led to the majority of people seeking care from alternative providers (Ahmed & Hossain, 2007).

3.9.2 The Private Sector

This is a much more heterogeneous sector comprising different types of medicine and variations in the extent of training received by individuals practising privately. For example traditional healers, such as those listed in Box 3.1, are grouped under private sector practice. Qualified and unqualified homeopathic doctors, village doctors (*Palli Chikitsoks*) with little or no training and semi-qualified community health workers (CHW) also represent private sector healthcare. The latter group of health practitioners has witnessed the largest expansion in the past twenty years through impetus from a number of international and national NGOs. In line with an expanding PHC infrastructure and because of inadequacies in government health service provision, health focussed NGOs have provided training to help establish a workforce targeted at local level health care provision. One particular Bangladesh NGO (BRAC) provides health care services through 70,000 CHWs throughout many rural areas of the country. The successful legacy of the 'bare foot doctors'[26] ethos has been heavily influential in this approach as CHWs often provide a cost-effective and efficient service provision for certain conditions such as pneumonia (Winch et al, 2005), and respiratory infections (Hadi, 2003). CHWs importance is further emphasised through their ability to "serve as a bridge between the community and the curative health providers" (Ahmed & Hossian,

[25] Due to greater levels of flexibility NGOs invariably have more license to experiment with innovative ways to respond to health problems in comparison to the more bureaucratic government structure (Zaman, 2005).

[26] The barefoot doctors programme was established in rural China in the 1950s. Barefoot doctors were peasants who were given a short training course and led preventive programmes, public health campaigns and provided basic curative care. Their health work was a part time responsibility supplemented by involvement in agricultural production and a paid share of collective production like all commune members (Bloom & Xingyuan, 1997).

2007, p. 341). NGOs such as BRAC have worked to strengthen the 'bridge' through the development of additional CHWs called *Shastho Shebikas*[27] who usually work within the same community in which they live thus further reducing the social and cultural gap between care provider and receiver.

A grass roots approach focussed on local capacity building clearly holds some beneficial aspects in terms of responding to disease and providing a mechanism for the poor to access certain forms of care. Yet an over-reliance on CHWs can detract from wider social and cultural factors related to disease risk and responding to ill health. For example, research in Bangladesh indicates CHWs only treat 13.8% of diarrhoeal disease (Ahmed & Hossain, 2007). Inconsistencies in guidelines, lack of clinical supervision, and fear of criticism from health facility staff have been suggested as potential reasons for deficiencies in CHW performance (Kelly et al, 2001). Therefore alternative avenues of care need to be established to support and supplement CHW healthcare provision. The concept and potential expansion of self-care may offer one option if similar community oriented approaches are to be taken forward, particularly while supply side issues remain so prominent.

Drugstores selling allopathic medicines on demand constitute the greatest provision of private healthcare in Bangladesh. The growth in this area of the health market commenced in the 1980s through the introduction of international reforms which sought to reduce the role of the public sector and increase private health care provision (Damme et al, 2004). As a result of providing relatively inexpensive services (often including deferred payment and payment in kind instead of cash), easy accessibility and being embedded in local communities they are now responsible for up to 60% of treatment services in rural Bangladesh (Cockcroft et al, 2007). This section of healthcare provision is now a key arena in terms of self-medication amongst the rural poor in Bangladesh. However, many of these drugstores are unlicensed, unregulated and are managed by staff with little or no formal training (Bangladesh Health Watch, 2008). This can have detrimental effects on health provision as drug store sellers also diagnose and treat illnesses in addition to dispensing drugs. Medicines and antibiotics are often dispensed on the basis of consumer purchasing capacity and are therefore less than the recommended full course and for fewer days than the recommended period (Rahman,

[27] These are women who are selected by the NGO BRAC to work as a type of CHW. They are usually between 25-35, educated and living within the community in which they are asked to work. *Shastho Shebikas* primarily act in the referral process for people experiencing ill health within the community.

2000). This can be harmful both in terms of failing to provide necessary treatment and contributing to antibiotic resistance (Farrar, 1985). One study exploring knowledge and practice of drugstore salespeople in Bangladesh identified irrational use of antibiotics in the treatment of diarrhoeal diseases (Ahmed & Hossain, 2007). Over prescribing, multi-drug prescriptions and use of unnecessary drugs have also been documented within this group of health providers (Guyon et al, 1994; Ronsmans et al, 1996) in a similar fashion to the research on this topic outlined earlier in Chapter 2. The commercialisation of primary care has also created a market where cash payments for health treatment is now common place, which often deters the poorest and most vulnerable groups from accessing healthcare thus further entrenching poverty (Bangladesh Health Watch, 2008). Aggressive marketing from pharmaceutical companies has been apportioned to the high levels of 'medication on demand' alongside the unregulated and unlicensed drugstores operating within Bangladesh (Ahmed & Hossian, 2007).

3.9.3 Traditional Medicine

As a result of the numerous barriers and constraints influencing effective GOB health service delivery the rural and urban poor often interact with the vast informal and non-biomedical health care system operating throughout Bangladesh. There are a range of providers in this sector which includes both male and female traditional practitioners, faith healers, ayurvedic and homeopathic practitioners. Many of these traditional practitioners provide a narrow range of services for a limited set of conditions (Bangladesh Health Watch, 2008). Although provision of treatment is predominantly through herbal remedies and some spiritual practises, traditional practitioners often remain a popular choice. They charge little or no visiting fee, are often easily accessible for the community and are socially and culturally closer to the population they serve in comparison to the majority of allopathic health professionals (Rahman, 2000). The terms and definitions of some indigenous healers found in Bangladesh are outlined in the box 3.1 below.

Although a substantial amount of traditional medicine is being eroded through the rapid expansion of allopathic medicine, the Government of Bangladesh has taken steps to improve service provision and regulate the traditional health care market. A traditional medicine hospital has been established in the capital Dhaka. The Government Unani and Ayurvedic Degree College Hospital was set up in 1987 to develop trained

manpower in the field of unani and ayurvedic medicine (Shaheen & Rahman, 2002). However, other institutional facilities within this realm of medicine remain limited.

Box 3.1 Traditional health practitioners in Bangladesh

Kabiraj: practises are based on the ayurvedic system as treatments are administered through either herbal remedies or spiritual methods. Herbal remedies consist of fresh or dried plant parts, often crushed into liquid format and taken with water. The spiritual kabiraj practices healing with assistance from the spiritual world, common practices implemented to alleviate the burden of the illness involve blowing spiritual charms while reciting holy verse from the Koran, or from spiritual reading within Hinduism, depending on the religious background of the kabiraj. The vast majority are self-trained or received training from a relative practising traditional medicine. A small number received formal training and qualifications from government or ayurvedic medicine colleges.

Fakir: healer who treats with use of religious verse. Enchanted holy water and the use of amulets are regularly practiced.

Pir: spiritual healers known to conduct religious rituals and some acts of healing through the use of enchanted holy water, amulets and blowing charms, considered to be of higher spiritual power than a Fakir.

Medicine seller/street canvasser/'quak': traditional, herbal and some chemical medicines sold in the street during weekly markets. Their uses are many and varied from the treatment of common ailments such as diarrhoea, dysentery and fever, to more 'taboo' health problems such as the 'strengthening of male sexual power' and STIs. The sellers who collect them often roam from market to market within an area and frequently have to venture into the illegal world of smuggling to obtain particular medicines from abroad.

Tokta: Combines ayurvedic, unani and shamanistic systems as well as some allopathic medicines

Hujur (Muujjin or Iman): religious preachers at the mosque who provide water with holy verse, and religious script in metal amulets to be worn as a necklace. The provision of these services is usually for a donation rather than a fixed price.

Ojha: magical healers who provide treatment for snake bite and 'unseen' illness such as evil spirits.

(Source: Zaman et al, 2004; Ahmed, 2005; Nahar, 2007; Bangladesh Health Watch, 2008)

3.10 Local Level Health Care Provision

As stated earlier in this chapter the local level context is a vital component in shaping the health seeking behaviour of households mitigating against and responding to

illnesses such as infectious disease. Understanding the extent and type of local level healthcare provision is an essential component of mapping the context in which self-care may, or may not, take place. The following sections therefore provide details on the formal and informal healthcare facilities and providers located in each of the three research sites.

3.10.1 Chakaria

There are a wide range of health facilities from both formal and informal sectors within Chakaria Upazila. This includes government and private hospitals, allopathic and homeopathic doctors, pharmacies and traditional practitioners. Table 3.6 below presents the number of fixed health service facilities located in Chakaria at the time research for this thesis was conducted. The type and number of health care providers in Chakaria is documented in Table 3.7.

Table 3.6: Health Facilities Available in Chakaria

Health Facility	Number	Type of Provider
Upazila health complex	1	Government
Zam Zam Hospital	1	Private
Maa-Shishu Hospital	1	Private
Mother & Child General Hospital	1	Private
SARPV Clinic	1	NGO
MBBS private chamber	37	Private
Diagnostic centres	17	Private
Allopathic pharmacy	76	Private
Homeopathic pharmacy	18	Private

Source: Rasheed et al (2009)

Table 3.7: Number and Type of Healthcare Providers in Chakaria

Healthcare Providers	Number
Qualified Physicians	39
Qualified Physicians (guest)	20
Paramedics	7
Family welfare visitor	13
Midwife	25
Nurse	8
Traditional birth attendants	950
Village doctor (allopathic)	328
Village doctor (homeopathic)	174
Kabiraj	239
Religious/spiritual healer	694

Source: Rasheed et al (2009)

As indicated in Tables 3.6 and 3.7 there is a severe lack of trained personnel with only 110 formally trained healthcare providers serving a population of over 215,000. This figure includes the 20 qualified guest physicians who only visit Chakaria two days a week and provide services through private facilities (Rasheed et al, 2009). This density of physicians per person is woefully short of the WHO recommendation (23 per 10,000) (Bangladesh Health Watch, 2008) and would require an extra 920 qualified physicians to be operational. With shortages like this it is hardly surprising that formal healthcare providers struggle to cope with demand and that patients in Chakaria access other treatment options in the search for a cure. The implications this may have on the adoption of self-care has to date not been explored.

3.10.2 Chakaria NGO Health Service Provision

As with most rural areas of Bangladesh a number of local and some international NGOs operate at various levels by providing programmes which support poverty reduction, education and healthcare. The vast majority of organisations in Chakaria offer micro-credit programmes which usually take the form of low interest loans acting as capital for impoverished households. Loans are usually only provided to women and therefore act as a mechanism in female empowerment (Hashemi et al, 1996), although this has been contested (Kabeer, 2001). ICDDR,B is one of the few organisations to establish a succession of health projects which have served to provide some health facilities and a series of locally driven healthcare support initiatives. Further details regarding the organisation are outlined in Appendix 1 including their health activities within Chakaria (Appendix 2).

3.10.3 Domar

The situation in Domar replicates that found in Chakaria. There are again a wide range of health facilities from both formal and informal sectors; however, the number of facilities is not quite as high as those found in Chakaria or Matlab. Table 3.8 below presents the number of fixed health service facilities located in Domar at the time research for this thesis was conducted. The range of health providers within this research site are diagrammatically represented in Figure 3.5. The type and number of health care providers in Domar is documented in Table 3.9.

Table 3.8: Health Facilities Available in Domar

Health Facility	Number	Type of Provider
Upazila health complex	1	Government
Family welfare centre	10	Government
Satellite Clinic	8	Government
BRAC health centre	1	NGO
MBBS private chamber	28	Private
Diagnostic centres	2	Private
Allopathic pharmacy	Not known	Private
Homeopathic pharmacy	Not known	Private

Source: Hossain & Ahmed (2006)

Table 3.9: Number and Type of Healthcare Providers in Domar

Healthcare Providers	Number
Qualified Physicians	22
Qualified Physicians (guest)	12
Paramedics	7
Family welfare visitor	12
Midwife	28
Allopathic drug retailer	122
Traditional birth attendants	73
Village doctor	163
Kabiraj	Not known
Religious/spiritual healer	Not known

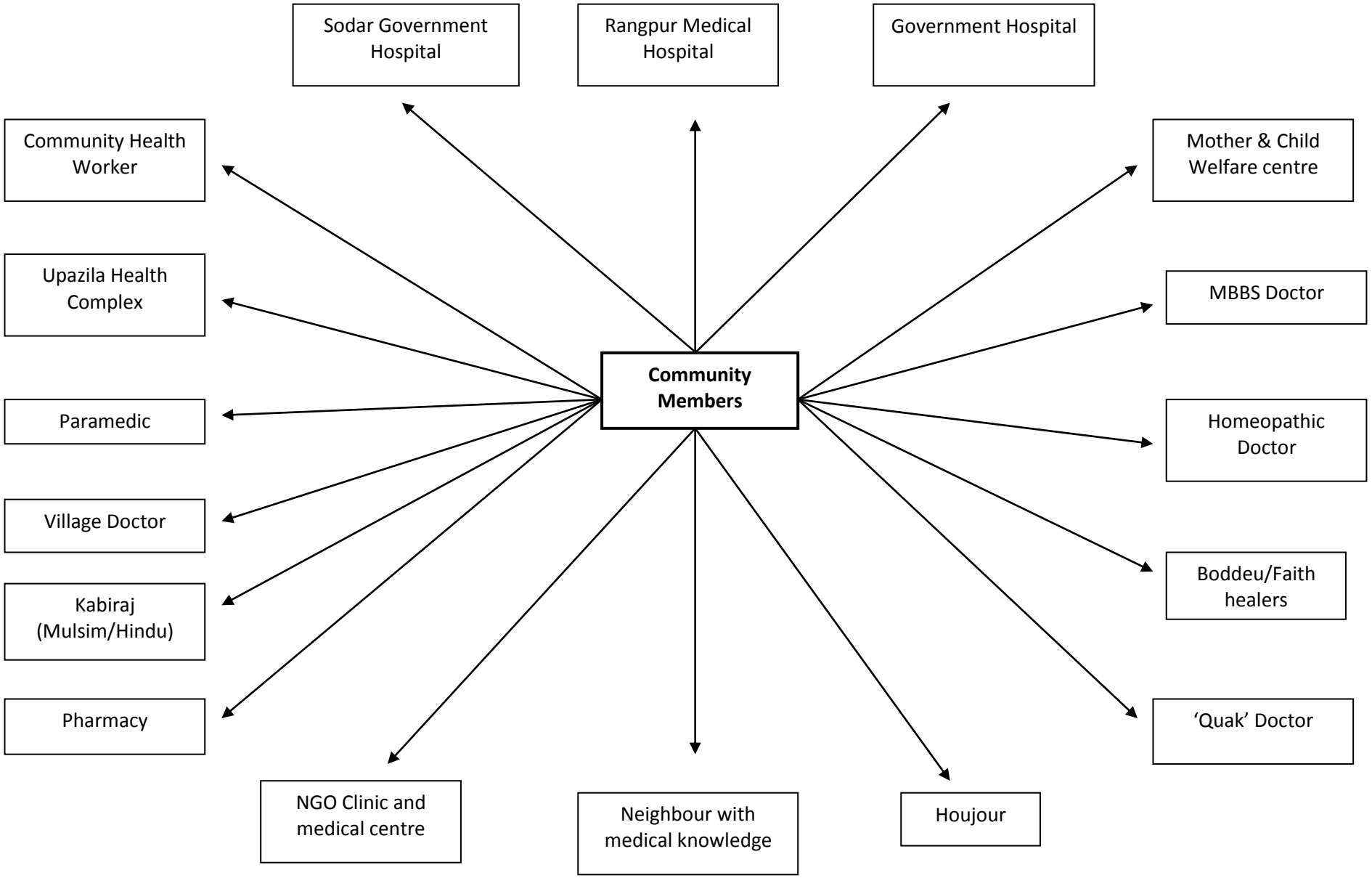
Source: Hossain & Ahmed (2006)

The lack of infrastructure and insufficient health personnel is replicated in the context of Domar. Again the density of physicians per person is significantly less than WHO recommendations (Bangladesh Health Watch, 2008). Domar is more greatly affected by this issue than Chakaria which may be due to higher levels of poverty and greater distance from the country's capital and other urban areas which present some levels of affluence. Overall, both the formal and informal provision of health care in Domar is likely to have some form of influence on the adoption and practise of self-care.

3.10.4 Domar NGO Health Service Provision

There is considerable NGO presence within Domar, primarily through organisations specialising in micro-credit provision for impoverished households. BRAC is the largest of these organisations which also provides a number of healthcare services for targeted households across Domar through a poverty reduction programme. Details of the organisation and the poverty reduction programme operational in the area are outlined in Appendix 3.

Figure 3.5 Health Provider Network, Domar



3.11 Bangladesh Health Care Provision and Self-Care

This chapter has provided a background to local and national contextual factors which are relevant to health seeking behaviour and the adoption of self-care in rural Bangladesh. It is clear that there are significant shortfalls in service provision provided through the government structure. However there remains an abundance of treatment provision within rural Bangladesh offering a range of different medical practices. The pluralistic market that exists represents a complex picture of healthcare choices, but one that is often beyond the reach of many poor households. Some of the greatest issues facing health care delivery in Bangladesh are reducing the inequitable nature of access, improving effectiveness in reaching the poor and diminishing the regressive cost burdens on impoverished households utilising health services (Fabricant et al, 1999; Kabir et al, 2000; Hulme, 2003; Sen, 2003). These issues consequently have implications on the uptake of self-care practices in terms of factors which may be influential in households resorting to forms of self-treatment. It also raises questions about the prospective integration of self-care as a low cost component of health care, which has potentially poverty alleviating effects by enhancing the ability of poor households to protect their health and respond to infectious disease.

With the importance of people centred risk reduction of infectious disease implied in disaster risk reduction policy agendas (WCDR, 2005), community participation and empowerment have again been centrally placed in efforts towards mitigating health disasters (Collins, 2009; IFRC, 2009). These have been fundamental principles of PHC which has also recently received renewed policy focus (WHO, 2008). However, the successes of PHC and health empowerment directives are both dependent on organisation and mobilisation of communities at the local level (Macfarlane et al, 2000). These efforts can become increasingly difficult to achieve as the original 'health for all' philosophy has been superseded by SPHC which ignores community, education and environmental components of health (Rahman, 2000). Further difficulties reside in the commodification of health care, which broadens inequities and further entrenches poverty, as highlighted in the case of Bangladesh within this chapter. As patients are unable to meet financial expenditure required for disease prevention and treatment they are placed at greater risk of the negative impacts of disease and illness. Potentially cost effective self-care strategies that are socially and culturally embedded at the local level hold clear resonance. At this stage the balance between individual self-care and institutional responsibility for disease mitigation and response is not clear. This includes

ascertaining the extent of choice behind self-care selection and the reasons for its adoption. It will also be important to assess how self-care can be used to its full potential to benefit both sick individuals and provide wider impacts on the health care system in the resource poor context of Bangladesh. This is particularly applicable to the current healthcare environment as supply side issues and constraints await alleviation and progressive sustainable development. The following chapter will outline the methods employed in this research to explore the self-care concept, its application and use as a disease management strategy in the light of this Bangladesh health care context.

CHAPTER 4: RESEARCH METHODOLOGY

"…a major goal of research on self-care behaviour is to learn how social situational variables and personal characteristics of individuals inter-relate to influence behaviour. No single research methodology can achieve this purpose"
(Dean, 1988, p. 86)

4.1 Introduction

Having reviewed the literature on self-care, presented the context in which health seeking behaviours take place and the types of health support available in Bangladesh, this chapter examines the methodology and techniques employed in this research. In doing so, the chapter outlines the methods applied to investigate the adoption of self-care in three areas of rural Bangladesh. Given the complex and changing nature of health, self-care and health seeking behaviour, a focus on mixed methods formed the basis upon which varied research techniques were applied. It is postulated that such an approach enhanced data validity and reliability as well as providing the most pragmatic and appropriate approach to the exploration of self-care as a disease management strategy. This chapter argues that the use of mixed methods through interviews, focus groups, a questionnaire survey and some participatory techniques, facilitates a more nuanced understanding of self-care, particularly in a developing country context. This is explored in detail in the opening sections of the chapter covering the research approach and the discussion surrounding mixed methods. Detail on the research methods used in this study constitutes the following part of the chapter before methodological challenges, critiques and limitations of the research are outlined. This is then followed by an analysis of issues of reflexivity and some concluding comments on the chapter.

4.2 Research Aims and Objectives

As intimated in Chapter 1, this thesis aims to critically examine the adoption of self-care for health with specific reference to diarrhoeal disease. By addressing this area of coping with ill health and environmental disease this thesis seeks to refine the debate surrounding safe and appropriate self-care and its implications for disease management. In particular the determinants, driving forces and prohibitive factors in self-care adoption are reviewed alongside participants understanding of self-treatment and the effects this type of disease management strategy has upon the individual, household and wider health system. In order to meet these aims three research objectives were identified and subsequently addressed within the study as follows:

- To examine the adoption of self-care as a disease management strategy in the event of illness, with specific reference to diarrhoeal disease

- To identify what is indicative of appropriate and inappropriate forms of self-care adopted in the event of illness, with specific reference to diarrhoeal disease

- To determine what lessons can be drawn from the adoption of self-care as a disease risk management approach and how these can be more widely applied to community based infectious disease risk reduction and policy

4.3 The Research Approach

The research presented took place within a wider research programme examining poverty and disaster risk reduction through improved health security in Bangladesh. This research entitled 'The meaning of Health Security for disaster resilience in Bangladesh' was conducted by the Disaster and Development Centre (DDC), Northumbria University in collaboration with the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B).[28] This was funded by the Economic and Social Research Council on behalf of the Department for International Development, UK. Details of the DDC and ICDDR, B are outlined in Appendix 4 and 1, while information on the Health Security research programme is outlined in Appendix 5. The design and implementation of the fieldwork for this thesis was conducted by the author, with some field research assistance provided by Bangladeshi translators, ICDDR, B and DDC personnel to overcome language barriers and assist in local logistical matters. The research methodologies described from sections 4.4 to 4.8 were specifically designed for this thesis but were also used in part for the wider health security research programme. For a summary of the type and timing of activities implemented throughout the entire fieldwork research process refer to Table 4.1 below.

[28] This research institution is also occasionally referred to as the Centre for Health and Population Studies

Table 4.1 Methodological Data Collection Activities

Methodology	Description	Sample Size	Data Collection Period	Justification for Use
Health Mapping	Identify location and number of local formal and informal health care providers accessed by participants	15 Mixed gender	October – November 2007	Rapid means of identifying local health providers within each research site and useful method of engaging participants with the research process
Free Listing	Identify frequently used local terms for self-care and the types of self-care adopted by respondents	15 Mixed gender	October – November 2007	Means of clarifying local terminology and exploring full range of self-care practices adopted by participants
Focus group discussion	Identify health seeking behaviour, barriers to health care access, use of self-care practices	15 7 male, 8 female	October – November 2007 May-June 2008	Rapid means of identifying coping strategies and the factors influential upon choice of treatment behaviour and/or self-care adoption
Illness narratives	Description of actual illness experience and use of self-care	5 3 male, 2 female	October – November 2007 May – June 2008	Provides detailed picture on the range of influences and reasons behind self-care behaviours
Questionnaire	Household health seeking behaviour and self-care practice questionnaire	631 267 male, 364 female	February 2008 – April 2008	Detailed information on household health seeking behaviour, availability of health care and treatment selection choices
Semi structured interviews	Interviews with selected participants on key elements highlighted through the previous methodologies	47 16 male, 31 female	November 2007 May – June 2008	Means of clarifying specific questions and emergent themes while maintaining comparability
Photo Diaries	Identify self-care practices used and accessed by participants	8 households 4 male 4 female	May – June 2008 February - March 2009	Means of understanding self-care from participants perspective thus reducing outsider influence in interpretation of findings
Biomedical Assessments	Biomedical assessment of appropriate and inappropriate self-care practices	15 MBBS qualified doctors assessing 10 cases of self-care for diarrhoeal disease	May – June 2008 February – March 2009	Enables measurement of practices indicative of appropriate and inappropriate self-care
Key informant interviews	Interviews with key respondents on salient factors highlighted through the earlier methodologies	20 13 male 7 female	February – March 2009	Means of clarifying specific questions and emergent themes generated from earlier research
Observations	Unstructured recording during all research methodologies	Both research sites as a continuous process throughout all field work visits	October – November 2007 May-June 2008 February - March 2009	Enables verification and recording of information. Provides means to identify themes for future enquiry

The research focuses on the adoption of self-care and the use of these practices as a disease management tool. As self-care is a relatively unexplored topic, particularly in the context of rural Bangladesh, some of the fundamental assumptions and underlying beliefs which shape the potential adoption of this behaviour warrant in-depth investigation. Examination of the nature and dynamics of self-care in such a context is thus likely to require different methods, approaches and understanding informed by broader philosophical assumptions regarding the nature of knowledge, reality and existence. The research therefore drew on the three fundamental concepts of research design, often described as the three 'inquiry paradigms' (Denzin & Lincoln, 1998; Mason, 2002). The ontological perspective, epistemological position and the methodological strategy form the groundwork for research design and procedures and were thus essential to guiding the research approach in order to address the aims and objectives previously stated. The ontological perspective is concerned with the form and nature of reality; how things really work within the social reality. The epistemological position refers to the nature of the relationship between the knower, or would be knower, and what can be known. How social phenomena can be known, how knowledge can be demonstrated and what can represent knowledge and evidence of social reality is also integral to epistemology. Finally, the methodological strategy constitutes the 'how', for example the methods used to discover 'what can be known'. It also concerns the logic by which the research questions are answered (Mason, 1996; 2002).

In the context of this research the ontological nature of the knowledge required is the existing nature of self-care and how adopting self-care takes place in the natural setting of rural Bangladesh. Application of qualitative methods used in this research, discussed in greater detail in section 4.4.1, was designed to fit this particular perspective. The qualitative techniques incorporated provided opportunities to discover some of the subtle meaning of lived experiences in relation to participant's views of self-care.

Emphasis on the relationship between the inquirer and reality proposed within an epistemological position primarily concerns the relationship between the researcher and participating villagers from the research sites in Chakaria, Domar and Matlab. Whatever relationship is established should be used as a bridge for the researcher to better understand the knowledge sought and lived experiences. A holistic view of the local context and participants is encouraged as a means to achieve this (Miles & Huberman,

1994). Empathy, understanding and acknowledgement of the biases, prejudices and held beliefs brought to the research by the researcher are viewed as key mechanisms towards achieving a holistic approach. These factors also place significance on the 'self' as a human instrument in rendering trustworthiness in knowledge or reality (Lincoln & Guba, 1985). This relationship between the self and reality becomes a focal point of the epistemological position.

Positivism and subjectivism represent two major paradigms which can be applied within this epistemological position (Crotty, 1998). The former refers to social processes as subject to casual laws, applying objectivity, rationality and application of rigorous scientific methods. It is predominantly associated with quantitative methods, testing hypotheses, using experimental groups, statistical analysis and establishing cause and effect relationships. The researcher is objective and detached throughout the process in identifying these causal relationships (Bryman, 2001, Patton, 2002). Subjectivism, also referred to as constructivist, naturalistic, inductivism and interpretivist, implies that the nature of social phenomenon and the existence of multiple realities create problems in proving causality with certainty (Crotty, 1998). Research applying this understanding is conducted with an open mind with willingness to learn and adapt as knowledge itself is complex and relative rather than absolute. Through this perspective participants are involved in the process of knowledge creation. Subjectivism is therefore associated with qualitative techniques, particularly participatory tools which address power relations and inequality (Guba & Lincoln, 2005).

Although both paradigms can represent discrete categories regarding the nature of knowledge, reality and existence, there is also an overlap in the process of knowledge construction. In the light of the opening chapter quote from Dean (1988), the relatively unexplored nature of self-care in Bangladesh and the value of combining qualitative and quantitative approaches in regards to examining research questions in public health (Russell, 2005), this study does not solely emerge from either a positivist or subjectivist epistemology. Methodological appropriateness and 'pragmatism' have been applied as the driving forces in examining and understanding the nature and reality of self-care in rural Bangladesh. Such a position supersedes the notion of one paradigm in favour of increasing the practical methodological options available (Patton, 2002). Multiple methods or mixed methods support the methodological perspective in which a pragmatic and appropriate means to addressing the research questions can take place.

The methodological strategy consists of the research design, the means of data gathering and data analysis. Both quantitative and qualitative approaches were deployed through which the local construction of self-care could be understood and in some cases measured. Application of this process followed an iterative process involving both the redefinition of the research questions and the empirical evidence which establishes the outcomes of the thesis. The process through which the methodological strategy was constructed and implemented is described in further detail in the following sections, including detail on the mixed methods.

4.4 The Mixed Method Approach

"A paradigm of choices rejects methodological orthodoxy in favour of methodological appropriateness as the primary criterion for judging methodological quality" (McKinlay, 1993, p. 39)

Considerable debate surrounds epistemological and methodological approaches deployed in particular research contexts. Conducting work in health and disaster management within Bangladesh is no different and thus careful consideration to type and method of the research approach is essential. Limitations are inherent in both quantitative and qualitative techniques. As such there has been an acceptance of utilising techniques to provide appropriate information rather than use of a particular method for its own sake as alluded to in the quote above from McKinlay (1993). There has also been an increasing shift towards use of multi-strategy research to overcome any deficiencies associated with either the qualitative or quantitative approach (Henn et al, 2006). In turn mixed methods may also provide more comprehensive evidence than either qualitative or quantitative approaches can offer when implemented in isolation. Mixed methods may also be more 'practical' in terms of enabling research to be examined by any and all methods applicable (Creswell & Plano Clark, 2007). This is emphasised by Brewer & Hunter (1989) who state the value of attacking "a research problem with an arsenal of methods that have non-overlapping weaknesses in addition to their complementary strengths" (p. 17). This approach is also stressed in relation to researching issues within public health (Baum, 1995). Not only are weaknesses diminished but potential strengths of each method are capitalised upon to the overall benefit of the research. Denzin & Lincoln (1998) identified this point by stating; "The

combination of multiple methods, empirical materials, perspectives and observers in a single study is best understood…as a strategy that adds rigor, breadth and depth to any investigation" (p. 4). As a method the focus is upon collecting, analysing and mixing quantitative and qualitative data, which combined together provide a better understanding and insight into the research issue under investigation (Creswell & Plano Clark, 2007).

However, the mixed-method approach is not without criticism and debate itself. As the approach stemmed, in part, from the infamous qualitative – quantitative debate of the 1970s[29] it is open to some of the critiques of that dispute. Although the difference in method was widely contested, deeper philosophical paradigms were also challenged. The core outcome of this scholarly discussion resides in the issue that methods are framed by the philosophical perspective of the researcher and therefore mixing methods may mean mixing philosophical assumptions. Greene et al (2005) identify three primary perspectives in response to this question and its surrounding issues:

- Philosophical assumptions should not drive practical decisions about design and method as this should be directed by the demands and requirements of the research context (a-paradigmatic stance).
- Philosophical assumptions should influence practice and thus mixing methods should mean mixing philosophy, which will also compensate for the fact that all philosophical assumptions are partial and limited (dialectic stance).
- Differences in philosophical assumptions can be de-emphasised to a point whereby the philosophical approach is neither beneficial nor problematic to mixed-method research (pragmatic stance).

However, a number of other benefits can be obtained from utilising a mixed-method approach. According to Denzin (1989) it can help compensate for the lack of consensus in research with each method implying a different line of action. Biases can also be overcome due to the process of triangulation that is enhanced through a multi-strategy approach (Creswell & Plano Clark, 2007). This is particularly pertinent to the debate of researcher influence and interpretation, which can be reduced to some extent through

[29] The debate concerned fundamental differences between the goals and epistemologies of quantitative and qualitative research approaches, including their appropriateness for social science application. Realism, objectivity and causal explanation were the mainstays of quantitative approaches. Interpretive, value-laden and contextual interpretations were aspired to by those advocating qualitative approaches (Green et al, 2005).

examination of the research problem from different angles and perspectives. The mixed-method approach can facilitate multiple perspectives in a way not permissible through the adoption of a single research approach (Henn et al, 2006). These issues and other advantages are summarised by Greene et al (2005) with key emphasis on the better understanding the approach brings, including:

- understanding with greater validity, credibility, more defensibly and with less bias
- allowing for the development of a more complete and comprehensive understanding through use of multiple perspectives
- more insightful understanding including new perspectives, ideas, creative concepts and meanings
- greater consciousness and diversity of understanding values, stances and positions

Given the defence of problems associated with the mixed-method approach and the potential benefits it has to offer research of this nature, a mixed approach aligned with the a-paradigmatic stance was deemed the most appropriate method to dealing with the complexities of public health research and achieving the research objectives.

4.4.1 Qualitative Research

The use of qualitative techniques facilitates analysis of experiences and interpretations of events and relationships from the site of examination (Gilbert, 1995). Burgess (1991) defined qualitative research as a series of research strategies including participant observation, in-depth interviews, unstructured or semi-structured interviews. "[…] the focus is upon strategies that allow the researcher to learn about the social world at the first hand. […] 'to get close to the data' and provide opportunities for […] concepts from the data that are gathered" (1991, p. 2-3). One of the strengths of qualitative research is its inductive nature based on flexible methods of data collection that are sensitive to the social context (Mason, 2002). The approach enables understanding and theory to emerge from data collection. Qualitative tools can facilitate an in-depth examination using various methodologies which enable participants to respond on their own terms, thus reflecting their attitudes and opinions (May, 2002). This can be crucial in the context of health care related research as Sullivan (2003) notes, "the most complete and meaningful assessments of health status are now seen to include the perspective of the patient" (p. 1595). According to Dill et al (1995) qualitative methods will also allow for exploration of the personal meanings of self-care and capture the

multiple realities that may exist within people's understanding and use of self-care. Qualitative methods also provide the opportunity to gain a detailed insight into the ideas, knowledge, perceptions, rationale, motivators and constraints that influence the adoption of self-care practices. At a wider level qualitative approaches are highly valuable within the field of public health as they offer the potential to develop theory (Naidoo & Willis, 2009).

However, qualitative methods often come in for criticism for a lack of scientific rigour and transparency, objectivity, repeatability and generalisation (Bryman, 2001). Although certain methodological weaknesses can arise within these areas Ramakrishna & Brieger (1987) argue that these limitations are insufficient to invalidate the qualitative approach. Rather, the triangulation[30] of approaches ensures validity and rigour while allowing fluidity and adaptation in moving towards research objectivity. There are limitations to the triangulation process such as conceiving an over-arching reality from data gathered in different contexts and that different methods can still be restricted by the same issues of reliability (Silverman, 2001). Therefore the use of different tools are employed to act as an 'assembly of reminders' in the data collection process acknowledging the partiality of data acquired through each respective method (Silverman, 2001). Furthermore, the findings obtained are intended for the local context, a factor that is essential in PHC planning, and not for larger generalisation. What is important for the wider audience is the transferability of processes through which the findings are obtained (Ramakrishna & Brieger, 1987).

4.4.2 Quantitative Research

The goal of quantitative research is the isolation and definition of categories and determination of the relationship between these categories with the greatest precision possible (Zaman, 2005). Within public health research epidemiological methods have been the predominant method to understand health issues through a reductionist perspective to identify patterns of causality (Baum, 1995). Quantitative approaches are associated with positivist perspectives aimed at collecting data through a standardised approach, searching for patterns of causal relationships between variables and testing given theories and hypotheses (Henn et al, 2006). As such, this approach offers an

[30] Triangulation refers to the use of multiple methods and multiple respondents to investigate the same research question with the aim of producing a convergent validity in which the several methods produce the same result (Ford Foundation, 2003).

excellent means to measuring the extent of self-care adoption and determining some of the underlying forces behind this adoption. It also enables statistical assessment of the relationship between any associations identified between self-care adoption, particularly with regard to measuring some of the advantages and disadvantages of adopting self-care. Survey techniques are regularly used as a quantitative tool as they can often give more accurate measurements of a target population's attitudes and behaviour patterns compared to other qualitative techniques (Calnan, 2007). Survey questionnaires are open to inaccuracies and errors, subject to commission, omission and bias, particularly among disadvantaged socio-economic groups (Lorant et al, 2007). However, they enable aggregation of information and contrast and comparison to take place between different behaviours and different sections of sample populations (Hoinville & Jowell, 1989). Therefore a survey questionnaire was used in the research for this thesis, discussed at length in section 4.8 below.

4.5 Fieldwork Preparation

The preparatory phase for fieldwork took place at the DDC in the UK and involved establishing field logistics, selection of field research sites and formation of communication channels with personnel from ICCDR,B. This process commenced in April 2007 in preparation for the initial field visit in October 2007. Similar preparatory work to organise in-country field logistics took place prior to subsequent field trips in May 2008 and January 2009, respectively. Additional preparations were required to hire a translator for field visits in October 2007 and May 2008. Interviews with female staff from ICCDR,B with a background and training in either anthropology or sociology took place at the ICCDR,B offices in Dhaka. Details on the selected translators who accompanied the author throughout all visits to the research sites are outlined in a footnote corresponding with section 4.7 below.

Further fieldwork preparations took place upon arrival in Bangladesh. This involved precise selection of villages within pre-identified research sites of Chakaria and Domar Upazila. Selection of these sites and the villages within the respective Upazilas occurred in conjunction with the requirements of the Health Security research programme outlined previously in section 4.2. Precise details on the field site selection process are described below.

4.6 Field Site Selection

Three field sites at Chakaria, Domar and Matlab were selected for research into the adoption of self-care and the use of this practice in disease management. These sites are identified in Figure 4.1 below. Both qualitative and quantitative research took place in Chakaria and Domar, but due to time constraints Matlab was only accessed for survey work. Although the three sites were selected in conjunction with the requirements of a wider research project the northern site of Domar formed the focus of earlier work by the author on self-care (Edgeworth & Collins, 2006). Research conducted in Domar had

Figure 4.1 Map of Bangladesh Indicating Field Sites

Source: ICDDR, B, 2007

highlighted the high use of self-care and examined the influence of asset availability of self-care adoption. Domar thus presented a highly suitable site to re-visit within the current research agenda. In central Bangladesh Matlab also presented high self-care adoption rates which had increased over a five year period between 1995 and 1999 (Ahmed et al, 2003). Finally, Chakaria in south east Bangladesh represented a field site where self-care rates had not been recorded.

Scoping exercises took place in October 2007 in both study districts to identify villages for further research in Chakaria and Domar. One study village was selected in Chakaria and one in Domar Upazila respectively on the basis of health issues and types of hazards[31] faced within the community. Practicalities of local travel logistics in accessing the villages were also taken into consideration. The local context of these villages in terms of socioeconomic factors, local livelihoods, the disease environment and provision of healthcare are described in the previous chapter.

4.7 Sample Selection

As mentioned in the previous chapters, socioeconomic status can be a key determinant in type(s) of health seeking behaviour adopted and can influence self-care utilisation (Khe et al, 2002; Ahmed et al, 2002; 2005). Consequently, household socioeconomic survey data for each village were used to identify poor and less poor households. The division corresponded to current definitions of poverty status in rural Bangladesh. Households dependent on menial labour,[32] irrespective of land ownership, were categorised as poor. Households not dependent on menial labour were categorised as non-poor (ICDDR, B, 2007). Households were then randomly selected from both poor and non-poor categories using Microsoft Excel software. Numerous studies have also demonstrated different health perception and utilisation patterns between males and females (Aljunid, 1995; Zaman et al, 2004). Therefore, random selection of households from both poverty status categories was conducted to identify adult[33] male and female participants for FGDs. Age has also been noted to influence health patterns and perceptions throughout the developing world (Muela et al, 2003; Zhang et al, 2007) and

[31] Exposure to hazard constituted an important factor within the Health Security research project which findings from this thesis contributed towards. The term hazard is often described as a naturally occurring or human induced process that has the potential to generate damage, create loss and is a source of danger (Smith, 2001).

[32] Menial labour is used to describe different types of low paid unskilled manual labour such as rickshaw puller, construction worker, agricultural land labour etc (ICDDR, B, 2007).

[33] For the purposes of this research an adult is defined as individuals between 18-49 years of age

in Bangladesh (Kabir et al, 2003; Biswas et al, 2006; Paul, 2006), particularly in light of increased morbidity rates in the elderly (Lopez et al, 2006). Thus, random selection of households containing elderly women[34] categorised as poor also took place to constitute a fifth FGD. This process was applied in Chakaria and replicated in Domar Upazila. An additional five FGDs (3 female, 2 male) were randomly sampled, but due to time restrictions and availability of participants the groups did not adhere to the same sampling criteria as they contained mixed age and socioeconomic status.

Potential respondents for participation in other PRA activities were randomly selected from the existing socioeconomic survey data from each study village via Excel software. However, convenient sampling was employed to select respondents for health mapping and free listing exercises.

4.8 Participatory Research Activities

Participatory Rural Appraisal (PRA), also known as Participatory Appraisal (PA) was an essential tool for this research given time and resource limitations and the need to cover a large number of people across two rural communities. PRA methods have gained increasing popularity within development research, particularly in developing country contexts, over the last fifteen years and have challenged traditional methods to project planning such as large scale survey questionnaires (Robinson-Pant, 1996). PRA offers a means to collect and interpret data with the active involvement of respondents through informal and semi-structured techniques such as diagrams and mapping exercises (Ford Foundation, 2003). These techniques have been highlighted for particular use in the exploration of health issues, specifically in contexts where participants are illiterate (Ross et al, 1998).

Previous research experience within rural Bangladesh[35] highlighted the enjoyment respondents' gain from engaging in these types of activities. In particular, PRA activities are an effective method of encouraging respondent participation in a way that facilitates increased levels of confidence and thus accentuates the level of required information provided. Confidence is salient to the case of rural Bangladeshi women and their discussion of health issues as women's often subordinate position in the rural

[34] For the purposes of this research an elderly person is defined as an individual 50 years of age and older
[35] The author previously conducted research in Bangladesh from May - December 2004 and July - September 2005 during previous research assignments

context can create a hierarchy in which females generally feel less confident and are restricted in offering opinions and views. As gender can play a key role in health seeking behaviour and decision making in rural Bangladesh (Zaman et al, 2004) it was essential to obtain the participation of women in this research. The PRA exercises employed helped to create a non-hierarchical structure to the information gathering process and thus created an environment where rapport could be quickly developed between the researcher and participants. The PRA tools utilised in the research for this thesis are discussed in further detail below.

4.8.1 Free Listing

Free listing is a method designed to gather preliminary data on a particular domain, utilised for the purposes of this thesis to generate a list of local and indigenous terms for self-care and diarrhoeal diseases. This research tool provided a list of types of self-care practised and the corresponding illnesses which they are designed to treat. The process highlighted the most readily used expressions for self-care and the most frequently adopted forms of self-care in Chakaria and Domar. The results of this exercise are provided in the following chapter.

The exercise also helped establish terminology used to describe diarrhoeal illnesses and the language used to identify different types of diarrhoea. As stated in Chapter 1, WHO classifications were employed to include diarrhoea and dysentery as the two main forms of diarrhoeal disease demarcated in this research. These two illnesses were identified through the distinctively differing symptoms associated with diarrhoea and dysentery. The former was referred to as *patla paikhana* or *diaria* (acute watery diarrhoea that can last several hours or days), while the latter was most regularly expressed as *rokto amasha* (acute bloody diarrhoea referred to as dysentery). Although some local variations occurred the terminology applied in both Chakaria and Domar and was successfully used as a means of clarifying the type of diarrhoeal disease participants made reference to within interviews, FGDs and informal discussions.

4.8.2 Health Mapping

Mapping exercises provide a means to identify the distribution of specific resources in a given area and can assist researchers in gaining greater familiarity with the research location under investigation (Sillitoe et al, 2005). Thus health mapping was used to

elicit discussions on health seeking behaviour and to identify the range of formal and informal health care facilities accessed by participants. Participants were asked to draw their local area and indicate the location of health providers. This process provided an understanding as to why certain health providers were utilised. Additionally it served as a mechanism to explore geographical barriers, lack of access to medical facilities and perception of medical facilities which have previously been identified as potential factors in the use of home remedies (Fleming et al, 1984). It also facilitated discussions on self-care and the timing of self-care adoption in relation to other treatment seeking methods. Some examples of 'health maps' are included in Appendix 6.

4.8.3 Focus Group Discussions

Although focus group discussions (FGD) share a number of commonalities with other qualitative methods, the social interaction between participants and between moderator and participants makes this approach unique (Lehoux et al, 2006). This interactive element enables a non-hierarchical atmosphere to develop, helping to create an 'open environment' which potentially allows respondents to answer questions more freely (Bouma, 2000). FGDs can also provide an insight into the motives and underlying reasons for reported attitudes and behaviours (Cote-Arsenault & Morrisson-Beedy, 1999), particularly in identifying the values users ascribe to aspects of health care (Schneider & Palmer, 2002). They were thus an excellent tool to explore perceptions of self-care and elicit information on why these forms of health care are adopted by respondents.

Focus groups were established via the sampling process described earlier in this chapter. The groups were divided on the basis of gender, socioeconomic status, with two groups chosen on the basis of age, selecting people fifty years and older. Justification for group division is also outlined in the sample selection process. Mobilisation of participants was conducted by fieldworkers from ICDDR,B. All respondents who consented to participation received a modest amount of food at completion of the FGD as a method of thanking them for their time and participation. Issues surrounding consent and research ethics are outlined in detail within section 4.15. Each FGD consisted of approximately eight people from each village and took place in a village health post in Muhuripara in Chakaria and in community members' homes in Domar. Group moderation was conducted by the author with assistance from a translator who also

acted as a facilitator when required. However, this only took place once the entire group agreed to the author's presence and role in directing questions at the group. Working in close coordination with the translator group moderation was conducted in a manner to allow the flow of discussion to be maintained while encouraging participation from more unresponsive members (Malhorta & Birks, 2000). Extensive note taking was used during the group discussion to identify emerging themes. However, all group discussions were recorded for full translation and transcription in English at a later date.

The focus groups provided some insightful information as the interactions between participants provided checks, balances and clarification of each other's opinions. This dynamic may have enhanced the quality of data obtained. The group process also appeared to be an enjoyable experience for the majority of participants as they drew on the human tendencies towards social relationships (Patton, 2002). For an outline of the questions administered during FGDs refer to Appendix 7.

4.8.4 Photo Diaries

Photo diaries were used to counteract some of the limitations associated with 'outsider' influence and interpretations of findings brought to the study by the researcher (Young & Barrett, 2001). The implementation of this methodological tool was anticipated to produce data in physical spaces and at times that would otherwise be unattainable. Eight disposable cameras, with flash, were distributed to participants who had been involved in the interview process and were willing to participate in the photo diary exercise. A range of age categories were represented in addition to both gender and socioeconomic status groups. Participants were asked to take pictures of their experience and understanding of self-care. This could include anything they used in self-care, anything which represented self-care or self-care administration. However, it was emphasised that these suggestions were not mutually exclusive and participants were entirely free to decide when and where to take pictures. Instructions on how to use the camera were given to each participant. The cameras were used until the film was completed and the photos were then developed and returned to the participant to be discussed in order to fully understand the images and what they represented within the rubric of self-care. A duplication of the photos was kept by the researcher with the originals remaining the property of the participants.

The photo diary method brings a number of advantages to the data collection process. Firstly, there is the potential to generate images which represent the topic under investigation in a way that cannot be achieved through interview or other PRA activities. The production of photographs when returned to the participant photographer offers a tool for discussion that can elicit a rich array of information (Young & Barrett, 2001). The use of cameras also removes the researcher from situations in which their presence may alter behaviours and provision of information. From the participant's perspective advantages can arise from the fun and novel nature of the research exercise given the context of rural Bangladesh where camera ownership and use is unobtainable for most households. Finally, allowing participants to keep their own photographs was designed to increase ownership, participation and hopefully enjoyment in the photo diary activity.

4.9 Illness Narratives

The inclusion of illness narratives was facilitated on the basis of previous personal research experience conducted in northern Bangladesh. This methodology generated a focus upon health seeking behaviour providing a means to fully examine the range of influences, trade-offs, and the social structures and relations that are involved in participants' health experiences (Zaman et al, 2004). One of the principal advantages of the narrative is that it represents a form of discourse "known and used in everyday interaction…an obvious way for social actors, in talking to strangers (e.g., the researcher) to retell key experiences and events" (Coffey & Atkinson, 1996, p. 56). Illness narratives originally emerged in response to a biomedical focus on disease which neglected the personal experience of the patient (Bell, 2000, Langellier, 2001). A point re-enforced by Hyden (1997) who states "patient narratives give voice to suffering in a way that lies outside the domain of the biomedical voice" (p.49). Although the approach has been questioned in terms of the 'naturalness' of the personal narrative and what social structures produce autobiographical narratives (Kholer-Reissman, 2002). Health practitioners increasingly recognise the value narratives have to offer in lending agency and a voice to the human subject, often resulting in improved diagnosis and patient satisfaction (Clark & Mischler, 1992). They not only help explore the impact and meaning of illness experiences but also serve to understand how this experience affects, and is affected by, broader social networks (Frid et al, 2000; Bury, 2001).

Narratives thus offered a key means to facilitate some of the aims of the research by enabling an exploration of the personal meaning of self-care within the multiple realities of life in rural Bangladesh. The incorporation of illness narratives established a platform for participants to express any thoughts and feelings regarding actual experiences of illness and also specific cases of diarrhoeal disease. They were utilised to gain a better understanding of the subjective experience and rationale behind self-care choices within the wider mosaic of health seeking behaviour. No value judgements were made on the decisions arrived at or the actions taken as participants recounted their experience. Instead the information was used as a platform to establish what individuals believed self-care to be and to assess which self-care choices and practices resulted in successful and appropriate outcomes and which did not. Again these assessments of safe and appropriate forms of self-care also consciously incorporated the views of participants regarding their treatment outcomes.

Five participants were selected for this component of the research process. Their inclusion was made on the basis of information obtained during semi-structured interviews or through snowballing sample selection in which other community members informed the research team of particular individuals who had an important narrative related to the research topic.

4.10 Participant Observation

Weaknesses to the narrative approach are highlighted by Radley & Chamberlin (2001) who stress that some displays of illness and health can be observed through non-verbal characteristics rather than articulated through the narrative format. Therefore, the use of participant observation throughout the research process was a key tool to support other verbally based research activities. Observations offer a number of benefits including the ability to report on a range of behaviours in their natural contexts (Morgan, 1997). Observations can also be conducted simultaneously to other research activities (Darlington & Scott, 2002). However, Burgess (1991) argues that it is difficult for a field researcher to take a specific role as research itself demands differing roles in different phases of the research over an extended period of time. Time constraints imposed upon each research site visit often resulted in observation taking place from the

perspective of 'observer as participant.'[36] Towards the end of the research process during the third field visit (February – March 2009) greater familiarity had been established with residents at the two research sites. At this point the observation dynamics may have shifted towards 'familiar observer' in which greater acquaintance with activities, experiences and accounts of ill health became more regular.

4.11 Interview Process

Forty seven semi-structured interviews took place at both research sites in October and November 2007, May and June 2008 and February 2009. All interviews were conducted in Bangla by Nazneen Rahman and Sanzida Parveen[37] in the presence of the author, which made on the spot clarifications and/or further in depth questioning in relation to emergent themes possible. In addition to note taking, all interviews were digitally recorded for future translation and transcription which was conducted by the author with assistance from the translator.

At the onset of all interviews, under the demands of research ethics and in accordance with previous research covering the use of interview techniques, the nature of the interview was contextualised (Hardon et al, 1994; Gilbert, 1995). This included a generic outline of the research articulated in 'layperson' terms as the need to understand what people did in the event of feeling ill or suffering from a particular disease. Emphasis was placed upon wanting to gain a better understanding of any home-based treatment and practices that might be used without seeking advice from local health care professionals. The purpose for this research exploration was also explained to participants as helping health practitioners to better understand how and why people make certain decisions in responding to ill health. The author was conscious of generating false expectations, particularly in terms of providing any immediate health or health service benefits to respondents. In order to avoid this situation a full explanation of potential long term implications and outcomes of the research was necessary. It was stressed that the research was for information purposes only and that immediate benefits

[36] This is defined as a relationship where "the contact with informants is brief, formal and openly classified as observation" (Burgess, 1991, p. 82).

[37] Nazneen Rahman acted as a translator and research facilitator throughout the first fieldwork phase in 2007. Sanzida Parveen accompanied the author during the second and third field trips. Both translators were employed on the basis of their excellent standard of English and extensive experience working in the health sector in Bangladesh. This included previous project management and translation experience for ICDDR,B and CARE International. Having a female colleague was also viewed to be beneficial in the event of interviewing women in rural Bangladesh.

and tangible outcomes from our discussions with participants were an unlikely result and would not happen quickly. The interviewer explained that a number of questions would be asked in relation to learning about personal experiences in dealing with and responding to ill health and diarrhoeal diseases. Only upon the permission of the participant did the interview take place. The ethical issues surrounding this component of the research process along with all other ethical considerations taken throughout all research for this thesis are discussed in greater detail within section 4.15.

Interviews were semi-structured and informal enabling participants to respond in an open, friendly and flexible environment. The latter point was highlighted by Gubrium and Sankar (1994) as offering the key to allowing important issues to emerge during the qualitative research process. This process primarily focussed on perceptions of self-care, the decision making process behind self-care selection and the motives for self-care use or non-usage. All three aspects taken together offer a comprehensive insight into how self-care behaviour and adoption is determined by people in rural Bangladesh. With this aim to elicit a more holistic perspective of self-care behaviour it was anticipated that a more dynamic portrayal of self-care practices and decision making could be ascertained.

In the majority of cases interviews took place in either the courtyard of participants' homes or inside the house itself during the day or night, at a time suitable to each participant. The specific details of interview times, location and duration are noted in Appendix 8.

4.12 Doctor Evaluation of Self-Care

The quality and level of appropriateness of participants' self-care decisions and practices was assessed by ascertaining the views of several qualified doctors working in Bangladesh. A total of 15 doctors were invited to evaluate a range of commonly identified self-care practices used to treat either diarrhoea or dysentery. An attempt was made to enable the doctors to appraise each particular self-care practice on a scale designed to differentiate between appropriate and inappropriate actions. This strategy is an adaptation of previous studies by Anderson et al, (1977) and Wilkinson et al, (1987) which evaluated health care actions. A more specific focus on types of self-care behaviour adopted in response to either diarrhoea or dysentery was assessed within this research. Overall the five self-care practises for diarrhoea and dysentery most frequently

identified through interviews and focus groups were presented to qualified doctors practicing in Chakaria, Domar and Dhaka. They were asked to assess each particular self-care method on a four point scale devised by Wilkinson et al (1987) which included;

- Appropriate, no reservations: The actions/order of actions/overall management was what I myself would have advised, had I been consulted about this symptom or condition by this person insofar as I can judge from the available information.
- Appropriate, some reservations: The action/order of actions/overall management, while not necessarily what I myself would have advised had I been consulted, would be likely to be helpful or not to alter for the worse the natural history of resolution of the symptom or condition. Reservations may relate to any of the matters on which information is available.
- Inappropriate, but not as such as to be harmful: I would not have advised this action/order of actions/overall management had I been consulted, but I do not consider that harm would have resulted from that action/order of actions/overall management.
- Inappropriate: I would have strongly advised different action/order of actions/overall management from that taken had I been consulted, whether because the treatment/medication used could have had harmful side effects, or caused harm in some other way, or because of serious reservations related to one or several factors.

All participating doctors were provided with a full explanation of the research and this particular method in terms of obtaining a biomedical perspective on levels of appropriate use for commonly practised self-care treatments used in response to diarrhoeal disease. All 15 doctors who participated were qualified and had extensive experience of practising medicine in Bangladesh. In total seven doctors from Chakaria, five from Domar and three from Dhaka participated in this evaluation exercise.

4.13 Questionnaire Survey

A structured health questionnaire survey was used in face to face interviews designed to elicit information and perspectives on self-care. The entire questionnaire formed part of the wider research project examining disasters, poverty and health security in Bangladesh as described earlier in this chapter. A series of questions specifically

focussed on self-care for the purposes of this study were included in the questionnaire. Development of the self-care component of the questionnaire was informed by findings obtained during qualitative methods employed during the first field work visit in October and November 2007. The questionnaire was piloted by the author in a village located outside the research sites in November 2007 in accordance with recommendations by Hoinville & Jowell (1989), prior to some modifications and full distribution in January 2008. Following the pilot process two questions were adjusted in terms of vocabulary to better relate to the local context. The questionnaire was translated and back-translated from Bangla to English by ICDDR,B personnel to ensure the questions had been correctly translated to Bangla in the first instance.

In total 680 questionnaires were undertaken with 631 successfully completed. A copy of the questionnaire is located in Appendix 11. The questionnaire solicited generic demographic and socioeconomic data covering age, sex, literacy and occupation of the household head. Questions then specifically focused on types of health seeking behaviour and recent illnesses suffered within a one month recall period before the survey was conducted. The advantages and disadvantages of self-care as well as factors which facilitate self-care adoption were also measured through the questionnaire.

The questionnaire survey was translated from English to Bangla by personnel from ICDDR,B involved in the Health Security project. It was then administered by twelve ICDDR,B field workers in each of the field sites and in a third location in Matlab, central Bangladesh, as part of the wider Health Security project[38]. Distribution of the questionnaire commenced in January 2008 (completed by March 2008) following a three day training period for all field workers. Training was designed to ensure field workers had mastered basic interview techniques and understood the background aims and objectives of the research study. The field workers needed to have a good understanding of the questionnaire, to know the exact aim of a particular question and how the question should be asked. These training sessions also served as an additional review of the quality of the original translation and its suitability to the local context.

[38] Matlab was not selected for additional qualitative research due to concerns over the selectivity of data collected. ICDDR,B has been collecting health and demographic data from Matlab since 1966. Extensive health service provision is also supplied by ICDDR,B and as such inhabitants have considerably greater access to health facilities. Residents are also exposed to a higher level of research from both ICDDR,B personnel and expatriate researchers working in Matlab, compared to other areas of rural Bangladesh. In light of this situation Ross (1996) highlighted that "the number of interventions within the study population has led to a widespread perception that the population is no longer representative of rural Bangladesh, let alone rural areas of the developing countries as a whole" (p.13).

This was particularly pertinent to Chakaria as the region has a specific dialect resulting in differences of certain vocabulary, expressions and accent. The field workers were all residents of Chakaria and were thus able to assist in adapting particular questions to the requirements of the local dialect. Some suggestions for the simplification of questions were also taken into account at this juncture in an attempt to minimise the social distance between interviewer and respective respondent.

Interview duration was approximately forty-five minutes to one hour including the time required for introductions, explanations of the survey and obtaining respondents' consent. Details on the consent form used with the survey and other ethical issues are outlined in section 4.15. Interviews predominantly took place within the home or outside the *bari* of the respective respondent depending on where they felt most comfortable to engage in the research. No benefits such as money or food were provided to respondents who consented to participation in this component of the research.

Data obtained through this method were analysed using Minitab 15 software to test for levels of significance on a range of variables. Further details on the process of analysis can be found in section 4.18.

4.14 Key Personnel Interviews

Key personnel are respondents who have a specialised knowledge and understanding of the issues examined within this thesis. To obtain information about self-care in the health discourse of Bangladesh it was relevant to explore the ideas and opinions of personnel from NGO health facilities, government services, private health care providers and public health policy makers. Academics and experts in health systems and health seeking behaviour in formal and informal health sectors, and NGO research staff living in the research site areas were also accessed for this component of the research. These interviews allowed cross referencing of previous information supplied through the earlier interviews and PRA techniques conducted with community members in Chakaria and Domar. Comparing and contrasting the experiences and opinions of community members with the ideas and views of key personnel and relevant stakeholders also facilitated a broader understanding of self-care in the wider socioeconomic and political context of Bangladesh. These interviews also provided a

means to explore potential systems of change and alternative policy practices relevant to self-care and the potential lessons that could be learnt from implementing self-care as a disease risk management approach to benefit the health status of the rural poor within Domar and Chakaria.

Interview procedures replicated those used in semi-structured interviews with community members in Chakaria and Domar as described above to adhere to interview protocol and ethics. However, a more detailed description of the research purpose was provided and a written informed consent form signed by respondents if full consent to participation was provided (Appendix 12). Key informants were also given the opportunity to withdraw from the interview at any point and permission was asked to include any direct quotes in potential documents resulting from the research. For an outline of the key points of departure utilised refer to Appendix 13. A list of individuals who agreed to participate in this component of the research and the dates when interviews took place is provided in Appendix 14. Their names have been removed in the interests of maintaining participant anonymity and to comply with ethical procedures outlined below.

4.15 Ethical Considerations

The research for this thesis took place within a wider research programme on Health Security in Bangladesh. Therefore all research undertaken adhered to the ethical principles and conditions established by the project donor (ESRC) and the local partner institution (ICDDR, B). The research also abided by the Northumbria University ethical standards policy including adherence to the principles of beneficence and non-malfeasance, respect for the rights of others and justice (Janosky et al, 2009). The proposed research received ethical clearance from the Northumbria University School of Applied Science Ethics Committee in July 2007 prior to undertaking the first field research visit in October 2007. A copy of the ethics form is available in Appendix 15. Clearance was granted on the basis of outlining that all research undertaken would observe the norms of social science rigour by paying due attention to issues of positionality, representation and participants rights, particularly treating all participants fairly and with respect.

During the research work itself a number of ethical considerations had to be taken into account and consistently monitored throughout the entire research process. Implications from the conduct and potential outcome of research upon existing socio-economic and gender dynamics had to be considered. Vulnerable groups in the targeted research sites are predominantly female in an already highly patriarchal society. Therefore particular attention and consideration was taken when engaging with female participants. The close coordination with local institutions and use of in-country staff from ICDDR,B was paramount in approaching research with this particular group in a culturally sensitive and appropriate manner.

Research conducted with vulnerable and marginalised groups can create greater community awareness of these particular groups (Brown et al, 2004). If research is not conducted in the correct manner these groups could be regarded as the 'source' of the problem resulting in stigmatisation and further marginalisation. Explanations outlining the intent of the research were kept at a generic level along with the reasons for selection of participants for interview and FGDs in order to minimise the likelihood of this potential stigmatisation scenario developing. Power dynamics and the hierarchical nature of some rural communities were also taken into consideration. Efforts were made to inform local community leaders about the research and engage them in the research process. Close coordination with local institutions and use of in-country staff from the wider Health Security research programme was of vital importance in successfully achieving this goal. Health problems and various diseases often carry 'taboo' status within many communities in Bangladesh and are therefore topics which people seldom discuss easily within their own families. Careful consideration of this context was taken into account throughout the research process in order to respond to participants' willingness to engage with the subject matter under investigation. The close coordination with local institutions and use of in-country staff was again a key factor in addressing this issue. Creating an environment in which the participant feels comfortable to disseminate information and comfortable to refuse to give information or withdraw from the research process all together was also vital in ensuring the principle of non-malfeasance was maintained. Establishing this type of environment in the research process also adhered to recognised approaches in community health and development that generate greater community involvement in health and aim to empower participants (Bell & Franceys, 1995; Collins et al, 2006).

The researcher consistently endeavoured to ensure all participants were always able to give 'informed consent'. Given the high levels of illiteracy amongst the target research population a process of verbally recorded consent was required. Therefore a written consent form was read in Bangla by a translator to prospective participants in the presence of a witness. Clarifications concerning the consent process were given when required and they were informed that they could withdraw their consent at any point. Participation in the research only took place if the researcher, in collaboration with the translator were confident that the potential participant had fully understood the contents of the consent form and that they were aware that they had no obligation to participate in the research. If these criteria were met the participant was then included in the research. Participants were asked for permission to include direct quotes in any documents. When visiting participants' homes, efforts were made to not make the purpose of the visit public to anyone other than the participant. All attempts were made to allow participants to express their opinions in a setting where they felt comfortable and at ease to express their opinions freely.

In each of the research activities (free listing, health mapping, illness narratives, interviews, focus groups, observations and survey data collection) an explanation of the research was given to participants prior to commencing the particular research activity. At this juncture participants were also given an opportunity to withdraw their participation. Whenever possible, copies of the scripts and summaries of the research activity in question were verbally summarised to participants (due to potential illiteracy and translation of language), for their information and verification. This process also provided an opportunity for participants to withdraw their comments and for the researcher to request permission to use the participant's responses in future documentation.

For some of the observational research which took place during each of the three field trips to Bangladesh, explanation of the field work prior to observations may have resulted in modifications of behaviour. When conducting observational studies in public places the author only informed those who requested an explanation of the researcher's presence. A generic explanation of the research was provided in these situations in order to limit the impact on participants' future behaviour and actions. For observational studies conducted in participants' *Baris,* participants were given an overview prior to the research work and a full explanation at the end of the observation

period, at which point they were also given the opportunity to withdraw their consent to this information being used in the future.

Anonymity of participants' identity was maintained at all times with individuals assigned code numbers. All research data were collected and stored by the researcher. All handwritten information was transferred to electronic storage under password protection, only accessible by the researcher. Original copies of data were then destroyed. Confidentiality of the data was maintained at all times throughout the research and analysis periods.

4.16 Research Limitations

Some limitations regarding the research process and the methodological techniques employed in this thesis warrant mentioning. In the majority of cases, measures of self-care behaviour were based on reported illness and treatment action, and not through direct observation of illness episodes unfolding and self-care responses conducted. The combination of research methods and techniques previously described were implemented to minimise these shortcomings, however, even these practices are prone to distortion in their implementation. For example surveys, questionnaires and interviews, though considerably flexible in their design, describe only reported behaviours and practices (Kroeger, 1983). This can be further compounded by the generation of normative, ideal or typical answers which participants believe to be the 'correct' response produced to 'please' the researcher, rather than enabling the provision of actual information (Ross & Vaughan, 1986). This situation can be accentuated in circumstances where participants perceive researchers to have some form of superiority, something which can occur in the patriarchal and social hierarchical context of rural Bangladesh. It can also transpire in heavily researched locations which lead to fatigue and limited motivation amongst participants, creating a false picture from the research findings (Ross, 1996). All of this reinforces the problematic nature of reported, rather than observed, illness episodes and self-care practices. Such bias is problematic in all interviews (May, 2002) although information on health related matters appears to be especially vulnerable to the choice of research method because of the sensitivity regarding the information requested. Health problems and various diseases carry 'taboo' status within many communities and can therefore be topics which people

seldom discuss easily within their own families. They are therefore less likely to discuss the subject with strangers (Seabrook, 2001).

Further methodological problems exist within health related research such as definitional difficulties of morbidity, reliability of recall periods and the validity of self reports. This frequently results in either the under reporting or over reporting of various behaviours (Schulpen & Swinkles, 1980; Tipping & Segal, 1996). It is therefore possible that some degree of under reporting of minor illness experiences may have occurred in the current research.

Additionally, it has been argued that survey research can oversimplify social reality as a result of fixed choice interview schedules and categories (Ross & Vaughan, 1986). This may create the impression of a static rather than complex and dynamic situation which is more comprehensively captured through the various qualitative techniques implemented in this thesis. However, although longer in-depth ethnographic interviews enable the collection of more complex and detailed information, certain problems remain in using this approach alone. Interview data can be subject to bias as a consequence of the expectations, prejudices and interactions of both interviewer and interviewee (May, 2002). Quality of interview data and findings may also be mediated by the context of the interview, the nature of questions asked, the structure of the interview and the degree to which the interviewer allows for interviewee response or gives the interviewee control of the direction of the interview. Furthermore, the ability of the interviewer to establish rapport to potentially increase the quality of interview data may be mediated by ethnicity, class, culture, gender and age (Ross & Vaughan, 1986). This is a point reinforced by Kroeger (1983) who recommends interviewers should have similar socio-economic status and backgrounds as respondents to minimise elements of misunderstanding or distrust, particularly salient factors in the context of this thesis in light of author - respondent differences. However, the presence of a female Bangladeshi researcher who acted as a translator is hoped to have reduced the impact of this differentiation and any effects it may have had upon the research findings. It is also anticipated that the combination of methodological approaches implemented, allowing for an 'assembly of reminders' (Silverman, 2001), will have limited the extent of potential variances and biases that can occur through the solitary utilisation of each respective method alone.

4.17 Methodological Challenges and Critique

The quality of the results obtained and the subsequent analysis and recommendations contained within this thesis are resoundingly dependent on the quality of research techniques employed throughout all data collection. As previously noted within this chapter, several steps were taken throughout data collection to consistently ensure quality and maintain ethical standards. Reflections on the field work highlighted a number of issues and critiques to the methodological process as a whole.

The flow of information generated by participants can be determined by categorisation or role attribution directed towards the researcher. This is particularly applicable in rural Bangladesh where communities regularly adhere to clear divisions of activities, social interactions and hierarchies stemming from gender and Islamic religion (as outlined in the previous chapter). This can affect the type of interaction and level of information participants felt comfortable to provide, particularly on occasions of gender difference between respondents and the author. However, it should be noted that in general participants of all ages and sex were very willing to participate in the research. On occasion female respondents refused to engage in the topics under discussion, in one case refusing to take part in the research in the presence of the author. In such scenarios the participants rights were fully respected and interviews or PRA activities were quickly terminated. As these outcomes were extremely rare, and acknowledged to affect research conducted in developing countries (Devereux & Hoddinott, 1992), it was decided that no changes to the research approach or techniques were required accepting that certain traditional, patriarchal and social factors would not always enable access with every participant selected for research.

Additional reflection must be directed towards the influence of nationality. As a foreigner conducting research within rural Bangladesh benefits and constraining factors can occur. In regards to the latter, language barriers often proved to be a restriction in obtaining full information at the time of research. However through the process of post research debriefing with the translator and translation of interview transcripts any issues the author felt warranted further exploration could be identified. Although this process provided a means to ensure that information could be explored as fully as possible, this was not always the case due to difficulties in re-contacting original participants. It also

added an extra level of inefficiency presumably not found amongst researchers fluent in Bangla and local dialects.

However, language was at times also an issue for the translator in Chakaria due to wide variation in local dialect. This was particularly problematic when interacting with elderly people from that region. In such circumstances other members of the community able to converse in both the local dialect and the more widely spoken version of Bangla became involved as an additional translator. This 'third link' in the language chain may have also led to deviations in exact information collection and posed additional problems during times of research transcription. The translation process also interjected an additional layer in the exchange of information and an added variable to take into account. Such a process could be critiqued in terms of using qualitative techniques where an open relaxed conversation is often crucial to enabling in-depth information to be obtained. Within these techniques facilitation of space for expression, such as allowing silences in conversation and not interrupting participant responses, cannot always be fully controlled when facilitation occurs through a translator. Given the experience and research skills exhibited by the translator used in all field work for this thesis it is anticipated that adequate space was granted to participants to express themselves fully and freely. However it cannot be guaranteed to the same extent as for the case of researchers fluent in Bangla and the local dialects of Bangladesh.

The deployment of cameras for photo diaries was in part an attempt to minimise some of these deficits in the research process. However, the use of this tool is not without critique and challenges. Distribution of cameras needed to take place in a sensitive manner in order not to highlight the issue of cameras being given out which might make other households jealous and cause conflict if they did not receive one. Camera ownership also needed to be conducted in a way that did not leave participants feeling pressured to take high quality pictures. Some participants initially expressed doubt about their ability to use the camera, however detailed explanation of camera use and some practice photos appeared to ease any feelings of inadequacy.

Time restrictions faced throughout the research process also posed an additional constraining factor. If extra time could have been spent at the field research sites an added level of ethnography would transcend the research approach allowing greater understanding of how participants interpreted their world and their engagements with

forms of health care and home-based care. The range of research tools and the mixed method approach employed is an attempt to overcome this particular deficiency in the research approach.

4.18 Analysis, Interpretation and Validity of Data

Data analysis is the process of bringing order and organisation to the data obtained through various research techniques. It requires key components or general principles underlying a particular phenomenon to be discovered in order to provide a better understanding of the aspect in question (Denscombe, 2003). This includes organising results into patterns, categories and descriptive units while looking for relationships between the data obtained (Brewer, 2000).

Upon completion of the various methodologies conducted throughout the research process all collected data were initially analysed and reviewed to avoid deviation from the research agenda and to enable the identification of emerging themes for further in-depth investigation. The emergence of new issues during data collection highlighted the importance of fluidity in any data analysis conducted (Holloway & Todres, 2005). Flexibility was thus maintained throughout all data analysis as research collected for this thesis progressed over a twelve month period. Therefore, the process of data analysis was integrated with data collection rather than being conducted in isolation. As a result, some data analysis took place at the research sites in Bangladesh during data collection, with further analysis carried out both prior to and after the completion of each separate field trip. Concepts and theories developed from the data through this ongoing process which compared emerging ideas with existing data and new data specifically collected within this study. Many of these emerging ideas, such as dignity, empowerment and critical consciousness, could also be re-assessed in further field trips to the research sites and as such, interpreted through a more thorough process of analysis (Erlandson et al, 1993).

Following the completion of all data collection final data analysis commenced by seeking to address both the questions that were generated prior to fieldwork and the insights that emerged during data collection. In compliance with Silverman (2001) and Patton (2002), a process of inductive analysis enabled collation of repetitive themes, patterns and categories. These were assessed for comparability between discussion

groups, interviews, PRA activities and observations to understand the multiple dimensions of self-care adoption and its application as a disease management approach. Organising the data along the lines of basic descriptions of self-care and specific terminology was followed by categorisation of perceived successful and unsuccessful self-care practices used. This process helped to establish a conceptual ordering which facilitated broader theorising of the themes under investigation by making logical and systematic connections between the concepts identified. Each theme could then be further sub-divided to identify responses with more specific focus. Qualitative data were organised and analysed in this fashion through the computer software programme NVivo 7. The software was particularly effective in achieving the three concurrent flows of data analysis advocated by Miles & Hubermann (1984); data reduction, data display and conclusion verification. Data reduction was required in order to deal with the mass of data accumulated through all research methods over the eighteen month data collection period and essential to facilitating successful analysis. Various tables of responses were created (Green & Thorogood, 2004) for data display and for continued analysis of patterns and themes in line with the objectives of this thesis. These data were then combined with the analysis of key themes to enable conclusion, verification and further theorising of the data.

Data obtained through the questionnaire survey were analysed using Minitab 15 software. Analysis involved running statistical tests to establish levels of significant difference between different variables under examination. Following observations from Heyman (1994) that "health variables are often nominal (e.g. presence/absence of a disease) and cannot be experimentally manipulated, causal relationships can only be explored through cross tabulation," (p.15) chi-squared analysis was employed. This statistical test was conducted to characterise levels of difference in self-care behaviour within the range of health seeking behaviour choices available in rural Bangladesh. This process was also applied to measure the difference in a range of variables including gender, age, socio-economic status, location, levels of literacy and education. In addition non-parametric testing also allowed for testing and assessment of advantages and disadvantages of self-care use as well as factors which can facilitate self-care adoption.

4.19 Reflexivity

As this research draws on ethnography in much of the study it is essential that the role of the researcher is acknowledged. Reflexivity is a key feature of ethnography and refers to the manner in which researchers focus on their own influence on the research, its findings and interpretations (Robertson, 2002). To be reflexive is to understand an ongoing examination of 'what I know' and 'how I know it' while experiencing a continuous understanding of experience and simultaneously living in the moment (Hertz, 1997). Reflexivity requires the researcher to be attentive to and conscious of the cultural, political, social, linguistic and ideological origins of their own perspective. It is also essential that these factors are applied to the voices of the research participants (Patton, 2002). All of this can influence the understanding and presentation of the research findings.

The use of a field notebook was employed to support the process of reflexivity throughout the data collection period. Adopting this strategy was designed to facilitate self-analysis and limit the degree of bias and preconceptions brought to the study by the researcher (Boulton & Hammersley, 1996). Use of a notebook also allowed the interactions between the researcher and researched to be documented. This was a process that was particularly important in the light of the cultural, ethnic, linguistic and at times gender differences between the researcher and participants. The translators who assisted in research facilitation and translation also took notes on many of the observations, interactions and interviews during the fieldwork. These notes were regularly discussed throughout the research process as a point of reflection and refinement for future research activities.

The researcher's nationality, age, gender and appearance influenced some participant's responses to questions in a number of ways. In the majority of cases participants explained their use of self-care practices in a highly informative manner, seemingly compensating for the researcher's deficit in local knowledge as the author was rightly perceived as an 'outsider'. This level of information was very supportive to attaining the research objectives. In many cases participants expressed their gratitude towards the researcher for 'coming so far' to take an interest in their lives and listening and learning from their health practices. Combined with the 'novelty' of having a foreigner in their midst often seemed to facilitate a highly productive interaction with participants. As more time was spent at the respective research sites in Chakaria and Domar greater

familiarity and trust was established between the researcher and participants, which allowed the researcher to access a wide range of people and it is hoped, enhanced the validity of findings. Other advantages emanating from an 'outsider' status were the lack of prior assumptions and prejudices carried by the researcher in relation to self-care, which enabled a relatively untainted perspective of the issues to be garnered.

As noted earlier in Chapter 1, previous work and research experience in rural Bangladesh probably assisted the researcher in undertaking this work and in being able to be productive during fieldwork. A previous awareness of the difficulties that can arise while working in Bangladesh relating to logistical and cultural factors helped in working with and around these issues while working towards this PhD thesis. Having a certain level of research experience in Bangladesh was also beneficial in terms of accessing, relating to and engaging with communities and individuals for this research. In particular, the researcher's established working relationships and experience with ICDDR,B was hugely influential in facilitating access to communities and being able to work efficiently and effectively in what can be a challenging environment.

4.20 Conclusions

This chapter has established a methodological framework to answer the overall research question in this thesis: to examine the adoption of self-care in rural Bangladesh. Drawing on the notion of the mixed methods approach the selection of different methods allowed for a holistic approach to the study of self-care as a disease management strategy in rural Bangladesh. Having established the process through which research was undertaken, assessed and analysed, the next chapter explores the empirical research findings derived from the methods described. The presentation of empirical data commences with the meaning of self-care as expressed by participants and the types of self-care utilised for health. Professional and lay person assessments of appropriate and inappropriate self-care measures are also explored before Chapter 6 discusses the determinants of self-care adoption.

FINDINGS

CHAPTER 5: THE MEANING AND PRACTICE OF SELF-CARE IN RURAL BANGLADESH

"…what is known about self-care is at one and the same time a great deal and very little"
(Dean, 1989a, p. 118)

5.1 Introduction

Although the availability of public and private health care has increased in rural areas of Bangladesh over the past thirty years (Paul, 1999) offering a highly pluralistic system, there is still a high degree of self-care adoption (Ahmed et al, 2006). However, the manner in which self-care is practised, administered and implemented has never been explored in great detail in developing countries, or in the context of rural Bangladesh. The following sections present findings from qualitative and quantitative methods that attempt to address some of these shortfalls to outline the meaning and practise of self-care. This includes ascertaining the language of self-care, and providing further evidence outlining the extent to which self-care is utilised in rural Bangladesh. Details on the components of self-care are also identified with a particular focus on the types of self-care used in response to diarrhoeal disease. As such, traditional, herbal and self-medication practices are presented before highlighting the process of self-care and the manner in which it is adopted in coordination with other treatment actions. Finally, the safety and appropriateness of the self-care methods used in response to diarrhoeal disease are assessed through the views of qualified health professionals practising in Bangladesh. The empirical findings presented within this chapter are also linked to relevant secondary sources previously outlined in Chapter 2, prior to further in-depth discussion and analysis in Chapter 7 in line with the objectives of this research.

5.2 Lay Perspectives of Self-Care

5.2.1 Self-Care Terminology

Several studies have investigated the meaning of health (Orbist, 2007), illness behaviour (Calnan, 1987) and coping mechanisms in response to ill health (Carrin et al, 1999; Hulme, 2003). This research attempted to achieve a similar aim by examining local level perspectives of self-care through qualitative techniques. This included the use of free listing exercises which provided the findings outlined in detail within this section. Local people have often been regarded as tradition bound, inactive, ignorant and

unimportant (Kyei, 2000), although in reality they make a considerable contribution to better understanding self-care and developing policy (WHO, 2009). Discovering local terminology for self-care was a pre-requisite to gaining an insight into the types, extent and reasons for self-care adoption. Therefore, one of the first steps involved in the exploration of self-care in rural Bangladesh was to gain an understanding of what self-care means. This was explored both in terms of the local language, and in terms of how participants describe practises that correlate to pre-defined notions of self-care within existing academic and health orientated literature.

Through discussions with participants a picture of self-care often emerged as experiences of illness and the health seeking behaviour actions taken in response to ill health. Participants were asked how they described the self-care actions they mentioned or what language they used to explain the self-care process during free listing exercises, interviews and focus group discussions. Participants regularly relayed their interpretations and terminology of the concept with relative ease within both research sites. No discernable differences in self-care language were identified across gender or age and the use of self-care terminology did not posses any distinct class dimensions. It was therefore not a vague or abstract concept that was difficult to describe and convey on the part of the researcher or the participants in Chakaria and Domar. This implies the lexicon of self-care is commonly used and widely understood within the rural context.

In line with the range of definitions regarding self-care outlined earlier in Chapter 2, a number of differing phrases and words are used in rural Bangladesh to refer to self-care and self-care practices, listed in Box 5.1 below. This terminology was ascertained through the use of free listing and further verified through interviews and FGDs. Participants often provided one phrase to describe self-care; however, they were able to recognise many of the other phrases and understood their meaning equally. In some cases the different terminologies were applied interchangeably by participants during discussions on self-care. The quantity and range of local self-care terminology also reflects the diversity of the concept and its pluralistic use in the Bangladesh context. This includes the use of self-care as a preventative measure, regulatory health mechanism, response to illness and use of medications.

Box 5.1 Self-Care Terminology in Rural Bangladesh

Bangla Self-Care Terminology	English Translation
Neejer jotno	Keeping clean
Neejer chikishta	Using medicines
Shustho thakar babostha	Keeping oneself healthy
Prathomik chikishta	Primary treatment / care
Nijer shastho rokkhar babostha	Maintaining good health
Shustho hower babostha	Taking steps to get cured
Rogir sheba	Care for patient
Shasther jotno	Care for health
Shastho sheba	Health care

5.2.2 Preventative Self-Care

The notion of preventative measures and general good health practises and hygiene was expressed by a number of participants through interviews and focus group discussions concerning what self-care involves. It became evident that many people viewed self-care as a mechanism within their own control to ensure good health and avoid disease. Emphasis on illness prevention measures was an important component of self-care for many participants, including 14 of those interviewed. This was also reflected in reasonable levels of health knowledge articulated by participants and echoed in the most frequently used self-care terminology *neejer jotno*, which means keeping clean. Participants who discussed self-care from these perspectives commonly described the role of hygiene practices such as taking a regular shower, having a balanced diet, keeping clean, taking sufficient rest and leading a disciplined life. These are practises which are very similar to forms of preventative self-care that have been previously identified (Punamaki & Aschan, 1994).

The preventative aspects of self-care were also a prominent feature of the photo diaries participants undertook. As described in the previous chapter, the photo diary exercise was designed to gain an understanding of self-care in a manner which diluted external researcher influence and interpretations (Young & Barrett, 2001). Several photographs included images of different foods that participants deemed to be high in nutritional value and were described as ‘good for health.’ Some of these pictures are included

below showing fruits, vegetables and hygienic food preparation practices that one participant believed was important in maintaining health and avoiding illness (Figure 5.1). Although many of the other photos (listed in Appendix 16) also included forms of plant life that participants utilised in various types of herbal self-treatment (discussed in section 5.4). The images highlight the importance people in Chakaria and Domar attach to the notion of illness prevention within self-care demonstrating knowledge of many aspects of health education initiatives employed by development agencies in this part of south Asia.

Figure 5.1 Local Interpretation of Self-Care

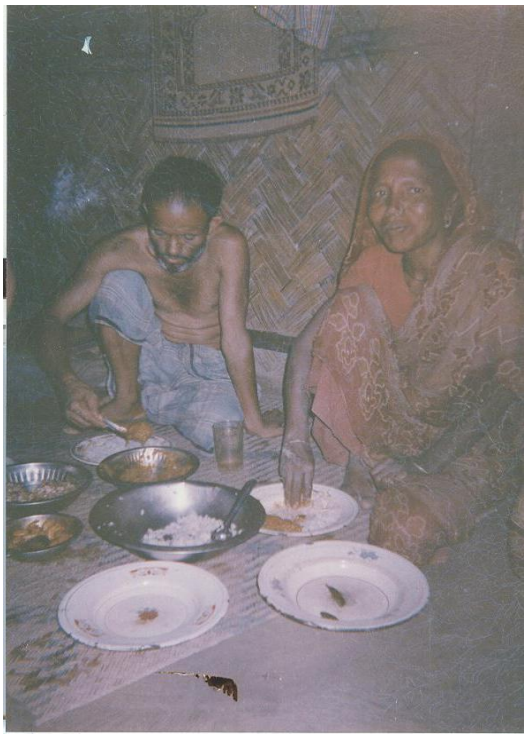


Figure 5.2 Local Interpretation of Self-Care

Source: PRA Participant Chakaria

Source: PRA Participant Chakaria

However, in contrast to previous research (Dean et al, 1983) the use of exercise was not widely identified as a form of self-care within the research sites. Sport and exercise was not practised by many people in either Chakaria or Domar as a recreational activity. At certain times of the research process school children were seen to play cricket, badminton and football during school times and prior to sunset. The number of adults participating in sport was extremely low and in all cases female participation was non-existent. Physical activity is a central component of many households' livelihoods, particular amongst the high numbers engaged in menial labour jobs (79%, Health Security Survey, 2009). However, participants did not associate the forms of physical exertion required with any forms of health maintenance or enhancement as has been documented among self-care studies in some developed countries (Berman & Iris, 1998). These activities were more likely to be perceived as detrimental to an individual's health rather than representing any form of benefit, health enhancement or illness prevention.

The notion of a disciplined life also presents a variation to other examinations of self-care. This was an overarching term that often represented maintaining a balanced diet and adhering to regular patterns of living, such as taking a shower at a similar time each day. It also encompassed other aspects such as not staying out late at night, limiting time spent away from the family home and maintaining good relationships with family members, neighbours and friends. In two cases a person's character was also perceived to be an important aspect of staying healthy and representing a component of preventative self-care as indicated below;

"…if I don't maintain a routine lifestyle, or spend my time outside my house or sit at the tea stall until midnight I will catch cold…So I give preference to a disciplined lifestyle to maintain a healthier life." (Interview 39)

"I will try to keep myself clean, I will take proper food and first of all I will have to check my character. I also advise people sitting here that if they want to stay healthy they will have to check their character. It is important to live life in a disciplined way, to take regular sleep, to take a regular shower. But it is also important to have good character. Respect your family and your neighbours. I live my life like this and I make sure I live my life in a disciplined way." (Interview 44)

Ahmed (2008) discusses the pivotal role spiritual attainments such as peace and dignity (*shonman rekhe chola*) play in poverty alleviation and empowerment. Maintaining dignity is an important goal within impoverished households' daily struggle for livelihood survival and could therefore be linked to preventing illness. It is perhaps for

these reasons that character and dignity are associated with some participants' notions of self-care.

5.2.3 Primary Treatment and Health System Integration

Some participants described self-care as primary treatment (*Prathomik chikishta*) and talked about the concept as the first form of response used in the treatment of an illness. Their understanding of self-care was one based on treating illness within the household through differing types of traditional practices and/or self-medication. If these methods were unsuccessful then alternative treatment providers from the formal and/or informal health sector were accessed. This process holds similarities to previous self-care adoption recorded in the literature (Dill et al, 1995) and is discussed in greater detail within section 5.4 below. However, it does highlight the more functional way in which participants understood the concept of self-care, a practice which is grounded in the practicalities of rural life. Although a sequential self-care process described by these participants influenced the terminology and understanding of self-care. Other participants highlighted some of the complexities of self-care and its interaction with different types of health care provision as captured in the quote below from a male participant describing what self-care involves;

> *"Keeping clean, taking proper food, taking proper sleep and seeking help and advice from the doctor"* (Interview 47)

The role of medical assistance in self-care has been a cause of divergent self-care definitions within the literature. This variety of understanding of the self-care concept was also apparent across and within both research sites as the role of health professionals in guiding participants in their health seeking behaviour and illness response was an important component of self-care for some people. Several participants had a more narrow understanding of the practices involved in self-care. Although these participants understood and engaged with one or more of the self-care terminologies listed in Box 5.1 above, they sometimes found it difficult to provide detailed description of the practices involved in self-care.

Overall, the diversity of understanding surrounding both self-care terminology and the types of practices they represented shows that the concept is varied and wide ranging. Self-care has been criticised as a weak concept due to the lack of clarification regarding its content and meaning (WHO, 2009; Wilkinson & Whitehead, 2009). The differing lay

perspectives presented within this thesis appear to add weight to such a critique. However, gaining an understanding of these lay terminologies and meanings does adhere to recent WHO (2009) recommendations to ascertain local interpretations of self-care. Despite the variety of self-care labels encompassing differing self-care practices, there is a widespread understanding of the concept in both research sites. This indicates that self-care is widely recognised and thus potentially widely practised, an issue which will be discussed in greater detail in the section below.

5.3 Utilisation of Self-Care in Bangladesh

Study findings from the questionnaire reflect the high propensity for the application of lay knowledge through self-care when responding to illness. Although self-care did not represent the most common treatment behaviour among participants there was a significant difference between several other treatment options. In response to illness, self-care was adopted by 36.1 percent of participants compared with 14.8 percent (statistically significant $p < 0.05$ using chi squared analysis) for use of government facilities, traditional healers (22.9%) and unqualified practitioners (17.8%), as shown in Table 5.1 below. These figures indicate that self-care is a widely adopted treatment response which is utilised more frequently than several other healthcare options in the rural Bangladesh context. However, there was significantly greater engagement with village doctors and qualified doctors as a treatment option when compared to self-care. The majority of the 628 survey respondents (68.8%) consulted a village doctor while almost half the respondents (44.9%) sought treatment from a qualified doctor. These findings are in contrast to some recent research in Bangladesh which has indicated self-care to be the most frequently adopted treatment behaviour (Ahmed et al, 2006; Edgeworth & Collins, 2006; Cockcroft et al, 2007).

Table 5.1 Treatment Response for all Illnesses

Treatment Response[39]	Number	Percent
Self-Care	227	36.1
Village Doctor	432	68.8
Union Health Complex	68	10.8
MBBS Doctor	282	44.9
Private Clinic	43	6.8
Upazila Health Complex	102	16.2
Homeopathy	34	5.4
Kabiraj	88	14
Spiritual Healer	41	6.5
Religious Healer	15	2.4
Health Worker	5	0.8
Medicine Shop Seller	112	17.8
Pray to God	74	11.8
Government Hospital	93	14.8
Other	8	1.3
Sample Size	628	

Specific exploration of self-care use in relation to different illnesses revealed the high use of self-care in response to diarrhoeal disease as shown in Table 5.2 below. This was in contrast to expectations based on the levels of illness recorded in the survey which identified fever as the most frequently reported illness (43.7% of respondents compared to 28.7% for diarrhoeal disease). Self-care was used by 119 (18.9%) respondents as a treatment for diarrhoeal disease, which was significantly more ($p < 0.01$) than the use of self-care in response to fever (8.6%), typhoid (1.9%), jaundice (9.4%), skin disease (2.4%) and malaria (1%). Overall self-care was predominantly used in response to minor illnesses. Serious illnesses such as malaria which are more likely to require qualified medical care to ensure correct diagnosis and appropriate treatment are not readily treated by individuals through self-care methods.

[39] Categories are not discreet

Table 5.2 Use of Self-Care for All Illnesses

Illness[40]	Number	Percent
Diarrhoea	83	13.2
Dysentery	36	5.7
Diarrhoeal Disease[41]	119	18.9
Typhoid	12	1.9
Jaundice	59	9.4
Fever	54	8.6
Skin Disease	15	2.4
High Fever cough	29	4.6
Broken limbs	3	0.5
Malaria	6	1
Pneumonia	12	1.9
Mental Illness	1	0.2
Other	31	4.9
Sample Size	628	

The use of self-care for diarrhoeal disease was also compared to utilisation rates for other treatment providers in rural Bangladesh accessed to manage this illness. Self-care was the second most frequently utilised treatment response (18.9%) in the event of diarrhoeal disease. Although the use of a village doctor (43.2%) was most frequently accessed by respondents, self-care was adopted in diarrhoeal disease management more than all other available treatment options. This was highly statistically significant ($p < 0.01$) when comparing self-care against traditional healers (0%), government hospitals (4.9%), private clinics (1.6%) and unqualified practitioners (9.9%) as shown in Table 5.3.

Table 5.3 Treatment Response for Diarrhoeal Disease

Treatment Response[42]	Number	Percent
Self-Care	119	18.9
Village Doctor	271	43.2
Union Health Complex	70	11.1
MBBS Doctor	91	14.5
Private Clinic	10	1.6
Upazila Health Complex	43	6.8
Homeopathy	11	1.8
Kabiraj	4	0.6
Spiritual Healer	0	0
Religious Healer	0	0

[40] Categories are not discreet

[41] Within this study both diarrhoea and blood dysentery constitutes the term diarrhoeal disease and therefore the figures presented for diarrhoeal disease are a combination of rates of diarrhoea and dysentery. The inclusion of these two types of diarrhoeal disease is based on WHO classification of the two main clinical types of diarrhoea: 1) acute watery diarrhoea that can last several hours or days, 2) acute bloody diarrhoea also referred to as dysentery (WHO, 2010). The distinction between types of diarrhoea is also described within Chapter 4.

[42] Categories are not discreet

Health Worker	0	0
Medicine Shop Seller	62	9.9
Pray to God	38	6.1
Government Hospital	31	4.9
Other	0	0
Sample Size	628	

5.4 Types of Self-Care

Very few studies have been directed towards the components of self-care (Dean, 1989). Interviews and focus groups provided a forum in which the types of self-care practices adopted could be detailed. Through this process a range of self-care behaviours for a variety of ailments and illnesses were identified. Self-care practices were described for a number of different illnesses including common ailments such as colds, fever and diarrhoeal diseases. However, other illnesses included toothache, abscesses, cuts, hookworm, and in some cases jaundice. Those self-care practices most regularly referred to by participants during focus groups and interviews are outlined in Table 5.4 below, with Table 5.5 providing specific self-care practices used in response to diarrhoeal disease.

Table 5.4 Types of Self-Care for Different Illnesses in Rural Bangladesh

Illness	Treatment Description
Fever	Pouring water on the head, put wet cloth on the head
Cough	Two local leaves (*Bashok pata* and *pouri pata*) crushed into a paste and taken with lime juice and/or ginger. Rubbing mustard oil into the body
Cold	Wearing extra clothes, Rubbing mustard oil into the body. Local leaf (*Tulshi pata*) mixed with honey and mustard and taken orally. Taking a mixture of oil and onion orally.
Skin Problem	A local leaf (*nim pata*) rubbed directly onto the skin
Digestive Problems	Eating sour foods, following previous prescriptions for a similar condition, using herbal plants

With regards to the treatments used for diarrhoeal disease a mixture of herbal remedies, foods and more modern methods were observed. In line with some previous research which has touched on the content of self-care practices in Bangladesh (Edgeworth & Collins, 2006; Mahmood et al, 2009) ORS, described as saline in Table 5.5, is a widely used self-treatment. This mixture of sodium, carbohydrate and water was established in

the 1980s and has become the cornerstone of many programmes trying to control diarrhoeal disease (Victoria et al, 2000). Bangladesh has played a prominent role in developing and distributing ORS through various research and development initiatives which have taken place throughout the country. The legacy of these efforts is thus apparent in households management of diarrhoea and their understanding of both when

Table 5.5 Types of Self-Care for Diarrhoeal Disease

Illness	Treatment Description
Diarrhoea	Packet saline (ORS) taken three times per day for two days
	Correctly made homemade saline taken three times per day for two days
	Coconut water with a little sugar taken twice a day for one day
	Coitzera leaf, guava leaf, *ghoichcha* leaf mixed together and eaten with a little salt, taken once a day
	Mashed rice mixed with water, salt and boiled (*Chaler bori*) taken twice a day
Dysentery	One or two Flagyl (antibiotic) tablets taken daily
	Banana curry (*kacha kola*) with rice taken twice a day
	Thankuni pata (edible bitter herb) ground and mixed with water, taken twice a day
	Banana (*Bicchii kola*) eaten without the seeds twice a day

to apply ORS and in many cases how to make the rehydration solution using ingredients readily available within the home. As a result, the majority of participants across both research sites were well versed in the concept and application of ORS in response to diarrhoeal disease. This was explained by the following male participant from Chakaria while discussing his knowledge of self-care practices during a focus group;

> *"About fifteen years ago (Bangladesh NGO) started working here…..They told us when you have diarrhoea not to go to the doctor but at first to try the saline. (The Bangladesh NGO) taught us how to make the saline because at that time the packet saline was not available. They taught us to make the saline. At first you have to wash your hands thoroughly and then make the saline with sugar, salt and water, pinch of salt, one handful of sugar. But if you don't have sugar you can use gur (type of sugar). (The Bangladesh NGO) asked at first to try this saline, if it doesn't work then try to give the patient chaler bori (mashed rice mixed with water and boiled, becomes a type of soup and eaten). But they also said that if you don't have the ingredients for saline then try to make chaler bori first rather than going to the doctor."* (FGD 11)

Through the provision of adequate education messages and training at the local level households have been empowered to treat diarrhoeal disease through low cost and easily accessible means. It is important to note that these self-care messages promoted by the national NGO referred to by the participant clearly stipulate the idea of trying treatments within the home as opposed to seeking external support that would incur greater financial and opportunity costs. What is also interesting is the provision of information to try alternative treatment measures using widely available ingredients if initial attempts either fail or ingredients are not available. By providing a viable alternative households are further empowered to implement self-care in response to diarrhoeal disease. The impact is highlighted within Table 5.5 above as these methods are some of the most readily adopted in both Chakaria and Domar.

There is also a wealth of scientific support for the administration of ORS (Victoria et al, 2000) and homemade forms of ORS (Chowdhury et al, 1988) which adds weight to supporting their adoption. Aside from the cost benefits when compared to accessing several other forms of treatment provision, these practises offer a safe and appropriate means of responding to many types of acute and chronic diarrhoea. The adoption of these practices was therefore approved by medical personnel working in both research sites.

> *"…we only allow them to take oral saline and we don't accept to take more than that to be taken by the patient…But it is only the use of ORS that can be permitted for them to use by themselves. If they have the knowledge they can use this to prevent further loss of fluids and salts."* (Key Informant 2)

Further evidence exists to support the use of other widely adopted self-care practices in response to diarrhoeal disease. For example, the use of green bananas has been shown to have clear therapeutic benefits in the management of persistent diarrhoea (Rabbani et al, 2001). Other studies provide further evidence for the use of banana as an anti-diarrhoeal agent (Faisant et al, 1995) and the effectiveness of rice based diets in treating diarrhoea (Roy et al, 1994). This is because the high content of amylase-resistant starch found in bananas enhances mucosal resistance and promotes healing by stimulating salt and water absorption in the colon and small bowel, which reduces the quantity and frequency of stools (Rabbani et al, 2001). The symptom alleviation provided by banana and rice based diets may be one of the reasons why participants adopt these self-care

practices. Additionally, medicinal qualities have been attributed to the hydrocotyle asiatica plant, locally referred to as *Thankuni*. Antimicrobial activity has been observed in the pharmacological properties of this plant and it has therefore been suggested that *thankuni* leaves are a beneficial ingredient in the treatment of dysentery (Chowdhury et al, 1997). Several other types of plant life in Bangladesh have been documented to have medicinal qualities used to treat a range of illnesses including, fever, jaundice, vomiting and diarrhoeal diseases (Rahman et al, 2001). The use of these natural products was therefore fairly common practice within descriptions of self-care utilisation; this is discussed in greater detail below.

5.4.1 Traditional and Herbal Self-Care

A number of traditional methods referred to as '*lota pata*' ('the gathering of leaves for herbal medicines') were discussed in FGDs and interviews, and in some cases demonstrated by participants, for use in responding to differing types of illness. The most frequently identified traditional and natural remedies are listed, in Tables 5.4 and 5.5 above. However, many other treatments were described by individuals in response to common ailments including diarrhoeal disease. Although these practises varied in terms of the types of leaves, bark or spices involved, they shared similarities in terms of the amount and texture of the remedy. This was normally in the form of a juice or paste which had been made by crushing together the various natural ingredients. They were usually taken once or twice a day until symptom alleviation was achieved, though it was often at the discretion of the patient how long this method would be administered until alternative treatments were pursued. For several of the traditional methods participants stated that they only needed to be applied once, if a solution was not obtained the method would not be reapplied.

In some cases participants were not able to elicit information on the methods they used as they had either received the information 'in a dream' or 'from Allah in a dream'. Revealing details of the ingredients involved was therefore not permitted. These participants demonstrated high levels of faith in the self-care practises they adopted and perceived the methods to be a highly effective therapy. All six participants involved in the interview process who used traditional methods acquired through sub-conscious thoughts stressed that these were the only practices they required to satisfactorily

respond to the illness in question. For example one elderly male explained the efficacy of the traditional method he used to treat dysentery;

> *"This really works well to treat dysentery, you usually only have to take it once, maybe twice, if it doesn't work then maybe a third time, but it usually works the first time so I don't have to go to the doctor for dysentery because this is so good, I am an old man, over ninety years old and I have used this for all my life and it always works so I never visit the doctor when I suffer dysentery but for other disease I will visit the doctor."* (Interview 16)

Levels of faith in these practices also stemmed from the belief that they are more effective than modern medicines and do not contain any side effects. The latter issue was also widely recognised in the survey results as an advantage of self-care (41.5%) and has been previously recorded in the case of Bangladesh (Chaudhury, 2001). Some other people preferred traditional methods as they were less expensive than alternative methods, particularly those requiring external consultation. The issue of cost benefits to self-care is discussed in greater detail in Chapter 6 (Section 6.7).

The traditional methods were predominantly used by older adults and the elderly, however they were not exclusively used by this age demographic as some examples of herbal medicines came from much younger men and women. In one case a female under the age of twenty discussed the use of herbal methods to alleviate digestive problems and respond to diarrhoea. The influence of age and gender as determinants in self-care adoption and the types of self-care practised is discussed at greater length in the next chapter. However, a number of younger adults did believe that the use of traditional methods was in decline and would continue to diminish through the generational changes. They often cited a lack of faith and the preference for modern methods through consultation with doctors, both qualified and unqualified. The predominant perceptions of traditional methods was astutely summarised by one male participant in his early twenties who commented; *"You know we don't value these medicines, even though they work. They are good."*

Contrasting opinions were also expressed through interviews and focus groups in relation to the spiritual methods of care many people adopt in rural Bangladesh. This includes wearing amulets (*tabiz*) around the neck, waist or arm. Amulets are small metallic cylinders containing script from the Koran prepared by a local Imam which are usually distributed free of charge. People use these amulets for a range of conditions such as dealing with nightmares, providing good luck, or to help with personal problems

or challenges. They are not used as a response to minor illnesses or infectious disease such as diarrhoeal disease, but in some cases people used amulets to protect against misfortune and future illness.

Other traditional forms of medicine used in response to ill health are rubbing charmed oil (*tel pora*, charmed by spiritual or religious chants) and drinking charmed water (*pani pora*). The latter was a widely identified response to coughs, colds and in some cases fever and diarrhoeal disease. Again there were some highly divergent opinions amongst participants about the efficacy of these types of practices.

5.4.2 Self-Care through Self-Medication

Self-medication was widely discussed within both research sites as a response to various illnesses such as colds, coughs, fever, gastric problems, skin diseases and diarrhoeal diseases. Throughout focus group discussions and interviews different types of self-medication through modern medicines was very popular within both research sites. Self-medication is one area of self-care that has been regularly explored within the developing world (Kamat & Nitcher, 1998; Hughes et al, 2001) with some examples from Bangladesh (Hossain et al, 1982). It is an area of self-treatment which is most vulnerable to arguments concerning safety and appropriateness of self-care usage. Indeed self-medication through the incorrect ingestion of many modern pharmaceuticals can produce a number of side effects that are extremely dangerous to the health of the individual (Etkin, 1992; Muela et al, 2003).

A vast number of self-medication practices included taking paracetamol or disprin in response to headaches, fevers and colds. Types of gastric problems described by participants were also often addressed through forms of self-medication by purchasing the Ranitidine drug which is sold under the brand name Neoceptin. In all cases drugs could be easily purchased from a number of local pharmacies and drug stores. In many cases prescriptions were not required or old prescriptions were re-used to obtain medications which the patient believed they required. The use of old prescriptions was described in detail by one male participant;

> *"A few days back I was suffering from a bad head ache but a few months back I felt the same problem, I bought these medicines again with a prescription I had received from one of the doctors in (local town). He was an expert doctor (MBBS qualified) so I decided to follow the same treatment because the pain I*

was feeling was the same as the first time. I went and bought these medicines again myself." (Interview 29)

Interviews and focus group discussions revealed that two antibiotics called Flagyl and Cotrim were used in response to diarrhoeal disease; this included treating both diarrhoea and dysentery. Flagyl is the trade name for Metronidazole which is a prescription medicine effective against anaerobic bacteria and some intestinal parasites which cause diarrhoea, giardia and amoebic dysentery (Medicinenet, 2010). Cotrim is a medicine which contains two different antibiotics called sulfamethoxazole and trimethoprim which are usually prescribed for a wide range of bacterial infections such as respiratory and intestinal infections (Medicinenet, 2010). These medicines were widely available throughout Chakaria and Domar where they could be purchased without a prescription from pharmacies, unqualified practitioners such as village doctors and from unqualified individuals in village grocery shops. In the case of Muhuripara in Chakaria this shop was located in the centre of the village in close proximity to the other main community areas such as the mosque, tea stall and a second food stall. The shop sold a small number of food items, children's sweets, non-perishable snacks and some medicines to treat colds and, when in stock, the antibiotics Flagyl and Cotrim. A similar picture occurred in Domar although the layout of Chikonmati made accessibility from local pharmacies and shops slightly more difficult due to the broader geographical spread of the village. However, both antibiotics were available without prescription from some of the local grocery shops. Again this was dependent on whether they were in stock and availability was fairly low as the two local shops did not stock either antibiotic during visits to the Domar research site.

In many cases participants were not familiar with the names of the antibiotics, particularly in regards to Cotrim. They were regularly referred to by their price, 3 taka per tablet in the case of Flagyl and 12 taka per tablet in the case of Cotrim. At the time of writing this equates to 2.6 pence and 10.7 pence respectively. Reference to the antibiotics in this fashion occurred as they could be purchased individually from local shops or pharmacies. The majority of purchases took place on this basis as individuals request the amount of tablets either in relation to their own purchasing capacity or their own prior experience of the number of tablets required to treat diarrhoeal disease. This situation was summarised by one female participant from Chakaria;

> *"…for diarrhoea we try at home first, we also buy the Flagyl tablet for 3 taka, It takes two to three medicines to get cured, then I don't take anymore. If it works then okay we are cured but if it doesn't work then we buy the twelve taka tablet (cotrim). If we at first buy the cheapest one then we only have to buy two tablets and spend five or six taka so the cost is less. But the twelve taka tablet is more powerful so I will only take one or maybe two"* (Interview 19).

The quote above highlights the way in which people mix the antibiotics and is a good example of the amount of tablets individuals often take in response to diarrhoeal disease. Although both the antibiotics discussed are included in the WHO essential drugs list (WHO, 2007) the manner in which they are taken by patients in Chakaria and Domar is not in line with recommended prescription dosages. For Flagyl this is either two times a day for five or ten days in response to amoebic dysentery or in the case of giardia three times a day for five days. For Cotrim recommended dosage in response to forms of diarrhoea is also twice a day for five days (Medicinenet, 2010). These are both clearly in stark contrast to all the examples of self-medication provided by participants in Chakaria and Domar. The use of antibiotics in this manner poses risks for the individual's health, ability to manage the illness and is likely to contribute to bacterial resistance to antibiotics. These issues represent a considerable limitation to self-medication strategies employed by the lay consumer at the household level, which will be discussed in further detail within Chapter 7.

Further exploration of this practice identified poor levels of understanding in terms of recommended dosage and the use of these modern pharmaceuticals. None of the participants were able to correctly state what dose of Flagyl or Cotrim should be taken. Medicines were taken until a cure or symptom alleviation was attained, usually identified over a two day period. If the medicines achieved a successful impact their use was discontinued immediately. If no beneficial impacts were perceived by the patient within either twenty four or forty eight hours then alternative treatment was pursued. These types of self-medication behaviours are synonymous with other parts of South Asia (Hardon, 1987) and raise questions over appropriate self-care. The issue of safety and likelihood of self-medication behaviours having a detrimental health impact was assessed at the local level through consultations with doctors practising in Chakaria and Domar. This is discussed at greater length later in this chapter within section 5.6.

5.5 Process of Self-Care Adoption

Self-care is frequently used in conjunction with other forms of treatment, either taken simultaneously and/or sequentially during certain episodes of illness such as diarrhoeal disease. Analysis of interview and focus group material highlighted some of the decision making processes behind self-care selection and how self-care treatment was administered within the broader mosaic of health seeking behaviour and decision making. As mentioned earlier in Chapter 2, previous research examining self-care in a developed country context identified three classifications of self-care actions; individual self-care, formally guided self-care and combination self-care.

Individual self-care encompasses the individual's own knowledge and experience which is used exclusively to respond to illness. Formally guided self-care incorporates advice, consultation and supervision provided by health practitioners to individuals adopting self-care. Finally, combination self-care refers to the dual use of self-care actions and decisions taken by the individual while also accessing professional medical advice and treatment (Dill et al, 1995). Although these categorisations cannot be directly transferred to the rural Bangladesh context some similarities were found in the self-care actions of participants in Chakaria and Domar. Overall, individual self-care and combination self-care remain applicable. However, the data indicate that formally guided self-care is rarely evident and replaced by sequential self-care care in which individuals will utilise self-care as a primary treatment measure but quickly move onto other treatment providers if the self-care practice does not provide satisfactory symptom alleviation.

Types of individual self-care were regularly relayed by participants. A good example of this was provided by one female participant in Chakaria who described the steps she took to respond to her husband's episode of diarrhoea;

> *"Yesterday my husband had diarrhoea so I bought medicine from the shop by the tea stall. I got five Flagyl tablets (antibiotic) and four packets of saline (ORS). I also gave him regular food, normal food, and now he is okay one day later. He is an adult so the medicine has to be very strong, so he took two Flagyl in the morning another two in the afternoon and then one more at night. Then from the saline I mixed two packets in a half kilo of water instead of one so that it makes it strong for him. Because of the diarrhoea he was losing something so I was trying to fulfil this by giving him the saline and the Flagyl. By the afternoon he was feeling better and he took a bath and now he*

has recovered. Because he is okay today then he could bring us some fish and some vegetables" (Interview 27)

This quote highlights the use of three self-care practices undertaken by the woman in order to provide symptom alleviation for the head of the household. It also provides an insight into some of the thought processes involved in the decision to use self-care and the extent to which self-care will be administered. The need to replace lost fluids was adequately understood by the participant; however, the manner in which medicines were administered does raise some questions as a higher than normal dosage was given within a twenty-four hour timeframe. The ease with which these self-care practices could be administered is clearly influential. Aside from the provision of foods which were available within the home, the medicines used in this example could be purchased from the local shop which is only a two minute walk from the participant's house in Muhuripara. Applying these types of treatment holds noteworthy benefits in terms of financial and opportunity costs that would have been incurred if this particular participant had sought treatment from other qualified and non-qualified practitioners.

Types of self-care actions varied greatly among participants and were influenced by the perceived severity and duration of the illness. This was expressed by many participants in both research sites who stated that greater severity would increase the likelihood of seeking professional health care.

"We try to get cure our self. If we are not cured then we go to the doctor. If we have minor problems like sneezing or fever, bad headache we try to cure ourselves, but if it is a major problem then we go to the doctor. Can we deal with major problems ourselves? No we can't, so we go to the doctor." (Interview 31)

The use of self-care and adoption of alternative self-care strategies is clearly rejected in the case of perceived illness severity. This indicates that people are aware of the limitations and effectiveness of self-care in response to certain illnesses. Sequential self-care was often seen as a result of these perceptions of illness and self-care effectiveness. Several other participants reinforced this perspective in the specific case of diarrhoeal disease as mentioned by one female living in Chakaria;

"I will only take them (self-care treatments) for minor illnesses. I must go to the doctor when I have a serious condition. Like I am suffering from fever, but if I take any medicines I will be cured. So for the guideline and the proper prescription I need to go to the doctor. I do take care of my minor problems

like belly pain and diarrhoea, and dysentery. I know I can take care of these illnesses, but not for the serious illnesses." (Interview 32)

Interestingly this participant classifies diarrhoea and dysentery as minor illnesses which she is capable of dealing with through self-management. Her previous success in treating these two illnesses through self-care practices gave her the confidence to continue with this approach and perhaps influenced her classification of illness severity. For those conditions which she was not able to successfully treat through home remedy and self-treatment, medicines are adopted through consultation with a doctor. This is viewed as a more powerful form of treatment required to deal with more severe diseases.

When enquiries were made into future health seeking behaviour and use of self-care if the same situation occurred again the participant reiterated their original health seeking strategy by placing self-care as the primary treatment response. This response was replicated by several other participants who demonstrated sequential self-care actions;

"If we have diseases like diarrhoea then I make saline (ORS) in the home. You take some salt and sugar and mix it together. I try this for one day after that if you don't feel okay then I will visit the doctor. If we visit the doctor usually we have to take the injection saline. Sometimes we have to be admitted there and take the medicines so I will always try the saline first for treating this." (Interview 21)

These types of responses were common among many of the participants involved in interviews and focus group discussions within both research sites. However, there was a range of responses with regards to the amount of time people invested in self-care until they would resort to alternative treatment providers if self-treatment was unsuccessful. Some people indicated that only a matter of hours would be afforded to their assessment of self-care efficacy before seeking other treatment measures. Others insisted that they would allow up to three or four days before making the decision to bring to an end the use of self-care. These variations were not consistent with different types of illness and in the case of diarrhoeal disease a wide variation in the length of self-care use was again apparent. The process of self-care use was summarised by the following comments from two participants discussing self-care use for diarrhoeal disease in Domar;

"They (self-care) are most effective at the very early stages in an illness. They can work at the primary level, but sometimes they work and sometimes they don't work. In that case we go to the doctor." (Interview 8)

> *"You follow one after the other. If the first one does not work then you have to try a different method, and if that fails then you go to the doctor. There are no rules about it. It does not matter which one you do first."* (FGD 6)

Overall the process of self-care appears to be one which is shaped by individual's personal experience of practises which are effective and those that have not achieved any benefits. The success and failure of various self-care approaches often dictates the likelihood of their utilisation. However, there are invariably additional circumstances which can be influential in how self-care is practised.

In several other cases self-care became part of sequential self-care due to time and accessibility restrictions in seeking other forms of treatment provision. This was particularly applicable in cases where illnesses occurred late in the day or at night leaving people in a position where self-care actions were the only form of treatment response available. In these cases self-care treatments were administered as a temporary measure in order to provide treatment and symptom alleviation until other health practitioners could be consulted.

> *"I had diarrhoea and I felt very bad. I couldn't eat. I couldn't stand. It made me feel very weak. But the problem was it was the middle of the night. There was no vehicle so I couldn't go (to consult a doctor). My neighbour came round with some leaves which they mashed up and I ate them, then they made some syrup which I drank. But these things did not help me that much. The pain and the diarrhoea was still there, but there was no choice. Through the night I slept on the floor under a blanket and then in the morning my health was still very bad so I went to the doctor when we could get a vehicle,"* (Interview 31)

Through further exploration of this experience the participant stressed that although the self-care used in this example were not particularly effective they did provide some symptom alleviation. However, given the timing of the illness it would appear that self-care was not adopted through choice but as a last resort in the absence of any other viable alternatives. Self-care may also be adopted in this scenario as a strategy that at the very least does not accentuate the severity of the patient's condition. The efficacy of self-care adoption may be doubted but there is often an understanding that it is better to attempt something rather than do nothing at all. By adopting such an approach households may be attempting to avoid further negative consequences as much as ensuring positive impacts on the patient's condition. This implies that there are low perceptions of risk associated with the use of self-care within such a context.

A small number of participants referred to combination self-care in which external medical advice was obtained simultaneously to the adoption of self-care practices. However, in contrast to previous studies (Dill et al, 1995), the type of health provider consulted was unqualified and from the informal health market. From the forty seven interviews and 15 FGDs only two participants raised combination self-care as a treatment action they had undertaken. In both cases a traditional healer was consulted at the same time as self-care utilisation. It therefore appears that participants do not rely on health professionals to verify their self-care, nor do people require validation in terms of increasing self-confidence and belief in the treatments they are using themselves in the home. Again this is in contrast to previous studies examining combination self-care and the reasons behind why people engage with self-care in this manner (Dill et al, 1995). Additionally no cases of simultaneous use of self-care treatment were recorded as participants rejected the use of more than one traditional or home based method at the same time in favour of sequential use.

5.6 Safe and Appropriate: A biomedical perspective

One of the fundamental concerns with the use or promotion of self-care is related to safety concerns and the potential adverse effects if self-care is not undertaken in a manner which will be beneficial to the patient (Abosede, 1984, Chang & Triverdi, 2003). Inappropriate self-care could be costly and detrimental to the individuals' health and wider livelihood security if they incur delays or pursue incorrect self-treatments. This could also negatively affect the health system if the result of inappropriate self-care is increased use of health care services (Chambers, 2006). Therefore, it was important to assess the standard of self-care identified in the rural Bangladesh context. In line with the main objectives of the thesis, this research focussed on practices used in response to diarrhoeal disease.

The quality and level of appropriateness of participants' self-care decisions and practices was assessed by ascertaining the views of several qualified doctors working in Bangladesh. A total of 15 doctors were invited to evaluate a range of commonly identified self-care practices used to treat either diarrhoea or dysentery. An attempt was made to enable the doctors to appraise each particular self-care practice on a scale designed to differentiate between actions indicative of appropriate and inappropriate practices. The full process of this component of the research is outlined in detail within

Chapter 4 (section 4.10) which is an adaptation of previous studies by Anderson et al, (1977) and Wilkinson et al, (1987).

Overall the five self-care practices for diarrhoea and dysentery most frequently identified through interviews and focus groups (listed previously in Table 5.5) were presented to qualified doctors practicing in Chakaria, Domar and Dhaka. They were asked to assess each particular self-care method on a four point scale covering;

1) Appropriate, no reservations
2) Appropriate, some reservations
3) Inappropriate, but not such as to be harmful
4) Inappropriate

Further details of this ranking criterion are charted in Chapter 4 (Section 4.10). The results of doctors' self-care evaluations are provided in Table 5.6 below.

A range of evaluation scores were obtained from doctors implying a diverse variety of opinion in regards to the safety and appropriateness of a number of self-care methods used in response to treating diarrhoeal disease. The mode and median of assessment scores for each treatment action were calculated. This highlights that three self-care treatments for diarrhoea (Cases 1, 2 and 5) were most frequently cited as '*Appropriate, some reservations'*. Interestingly, none of these three cases were considered as '*Inappropriate'* by any of the doctors consulted indicating that, although not viewed as an ideal treatment, doctors did not strongly object to these types of practices being used in some capacity. However, a number of other treatments were frequently classified as '*Inappropriate*' (Cases 4, 6, 8 and 10). However, it should be noted that Case 4 was not regularly identified by participants and was added as an additional example of traditional methods used. This may have been influential in the type of score received as many doctors were not familiar with some of the natural ingredients used; some doctors even omitted scoring Case 4 on this basis.

The five self-care treatments for dysentery also received a range of scores. However, each of these treatment practices received a number of '*Inappropriate*' classifications from some of the doctors, although Case 9 (*thankumi pata, an edible bitter herb*) scored the lowest overall. This case again polarised the biomedical perspective with some doctors grading it as

Table 5.6 Biomedical Evaluation of Self-Care Practices for Diarrhoeal Disease

Case Number	Illness Described	Treatment Description	Evaluation Score (1= Positive 4= Negative)															Mode	Median
1	Diarrhoea	Packet saline taken three times per day for two days	2	2	3	3	3	2	2	2	3	3	3	2	2	3	2	2	2
2	Diarrhoea	Correctly made homemade saline taken three times per day for two days	2	2	3	3	2	3	2	2	3	3	2	2	3	3	2	2	2
3	Diarrhoea	Coconut water with a little sugar taken twice a day for one day	2	3	4	3	3	4	3	2	3	4	3	3	4	3	3	3	3
4	Diarrhoea	*Coitzera* leaf, guava leaf, *ghoichcha* leaf mixed together and eaten with a little salt, taken once a day	-	4	4	4	-	4	-	4	4	4	4	4	4	-	4	4	4
5	Diarrhoea	Mashed rice mixed with water, salt and boiled (*Chaler bori*) taken twice a day	1	2	3	3	2	3	3	1	2	3	2	2	3	2	2	2	2
6	Dysentery	One Flagyl tablet taken once a day	2	3	4	4	4	4	3	2	2	4	4	3	4	4	3	4	4
7	Dysentery	Banana curry (*kacha kola*) with rice taken twice a day	1	3	3	3	4	3	3	1	2	3	4	3	3	3	3	3	3
8	Dysentery	*Keramarish* root, *dongolash* root, *dalim* leaf, guava leaf and bark from a mango tree all mixed and ground together to produce a juice. Juice taken twice a day with some sugar.	-	4	2	4	-	4	-	4	3	2	4	4	4	-	4	4	4
9	Dysentery	*Thankumi pata* (edible bitter herb) ground and mixed with water, taken twice a day	2	3	2	2	4	3	4	2	4	2	4	4	3	2	3	2	2
10	Dysentery	Banana (*Bicchii kola*) eaten without the seeds twice a day	1	3	4	2	4	4	3	1	3	4	4	3	4	2	3	4	4

'*Appropriate, with some reservations'* while five doctors viewed the use of *thankumi* to be '*Inappropriate*'. Cases 6, 8 and 10 received the highest mode and median scores, although some doctors viewed each of these treatments to be '*Appropriate, with some reservations'.* However, the majority of scores reflected inappropriate practice with the primary concern related to the misuse of antibiotics (Case 6), or the use of treatments that did not correspond with the biomedical recommendation of prescription antibiotics for dysentery (Cases 8 and 10).

The reasons behind these scores were explored through informal discussions with each participating doctor in order to ascertain an understanding of their particular ranking and their own perspectives on self-care. These discussions illuminated a number of issues surrounding the use of self-care in rural Bangladesh from the biomedical perspective. Some of the doctors were not readily supportive of several self-care practices including the use of traditional and natural remedies. One of the reasons provided by one doctor participant was in relation to concerns over secondary infection when people used natural ingredients in their own remedies;

> *"I am not against the idea of people using some of these practices (self-care treatment for diarrhoea and dysentery as presented in Table above) and being able to try and take some control over their health. But I cannot support this because of secondary infection. I am worried that many of these treatments, the plants, the leaves and so on can lead to secondary infection because they are direct from the soil. This can cause the patient more problems and lead to further illness. So I simply cannot support it"* (Key Personnel Interview 9)

The majority of explanations for scoring some of the self-care practices as inappropriate stemmed from concerns over the misuse of antibiotics, in particular the use of Flagyl. This is an antibiotic that is often prescribed by qualified health professionals in Bangladesh for the treatment of severe diarrhoea and some cases of dysentery. These concerns lay with the use of Flagyl without consultation and prescription and with the quantity and duration of antibiotic use. Fears over antibiotic resistance and longer term damage to the patient through use of the medicine when it may not necessarily be required were key factors in the '*Inappropriate*' ranking for this particular self-care practice. An issue captured by one of the doctors working in a private hospital in Chakaria;

> *"I understand why many people are taking this (Flagyl antibiotic). But this is not the way it should be done. We, the doctors, must make the*

> *prescription and they must follow what we have said. Taking like this (as described in Table above) is not good for them. It will build up resistance in the longer term, in the future and will not be effective if only taken in short like what they are doing"* (Key Personnel Interview 12)

Some reservations were also expressed in relation to home based methods which utilised food recipes as a method of treatment for diarrhoea and dysentery. Although one of these cases received a low score indicating it to be appropriate (Case 5), there was some apprehension expressed in terms of the anti-pathogenic qualities of these particular methods. Doctors stated that they may be relatively effective in terms of symptom alleviation but they lacked the means to provide an overall cure by dealing with the diarrhoeal disease pathogens themselves. Therefore, it was viewed that they would not provide a successful and effective treatment. There were also concerns that these methods could cause constipation, trapping any disease pathogens inside the patient and thus aggravating the patient's condition.

However, these discussions also elicited some positive comments from doctors in terms of their understanding and engagement with the types of self-care participants adopted to respond to diarrhoeal disease. This was reflected to some extent in the low ranking scores associated with Cases 1, 2 and 5, as previously mentioned. Three of the doctor participants acknowledged the medicinal qualities found in bananas, which are supported by clinical evidence (Faisant et al, 1995; Rabbani et al, 2001). Their knowledge of this information was used to justify their respective individual scoring of Cases 7 and 10 as either '*Appropriate*' or '*Appropriate, some reservations.*' The use of *thankumi pata* in the treatment of dysentery (Case 9) also received forms of positive acknowledgement from doctors due to the leaf's medicinal qualities. Additionally, two doctors recounted tales from their childhood regarding this particular self-care treatment;

> *"You know when I was a child growing up in the village out in the rural area I saw many of these things happen (self-care practices) and this one (Case 9) is something I saw frequently and so I know this plant and I know that people use this. To my knowledge I did not see anyone suffer when they did this and yes it can be a successful treatment in many cases of diarrhoeal illness…..so I think this type of thing is ok. It does not present a problem for me. I think it is appropriate practice"* (Dhaka Dr. Key Personnel Interview 8)

Oral rehydration is generally considered to be one of the best forms of treatment for diarrhoea within the medical profession. It is a therapy with a strong bedrock of research demonstrating efficacy, levels of cultural acceptability, local availability and cost-effectiveness and safe to use through self-medication (Victoria et al, 2000). It is therefore not surprising that the two self-care cases utilising ORS (Case 1 and 2) exhibit low scores indicating '*Appropriate, some reservations*.' Doctors did not appear to have any substantial objections to the use of ORS, either purchased or made within the home. However, they did raise concerns that the amount of ORS taken was not sufficient in order to achieve the most beneficial outcome possible. They stressed that rehydration salts needed to be taken on a regular basis throughout the episode of diarrhoea until symptoms discontinue. Interviews and focus group discussions revealed that the majority of people in the research sites did not take ORS with this level of continuity as it was generally taken only once, twice or three times per day. For this reason many doctor participants felt that they could not score Cases 1 and 2 lower to the point of *'Appropriate, no reservations.'*

The possible misunderstanding of ORS effectiveness and the manner in which it should be administered to a patient was also evident in some discussions with participants. This issue was concisely captured by one female participant while discussing the course of action she took to respond to her husband's recent episode of diarrhoea;

> *"My husband was suffering from diarrhoea so I gave him packet saline and Flagyl. He took them both at the same time and he got a cure very quickly. By the following day he was completely recovered. Because he is an adult he took two packets of saline together and I gave him four Flagyl tablets during the day because the medicine has to be stronger for him…he took a tablet after each meal and then an extra one at night, he was feeling better by the evening time, but it was important for him to take extra medicine for a complete recovery"* (Interview 31)

The above quote highlights a number of issues in terms of people's use of self-care in rural Bangladesh. In relation to ORS use it appears that this participant believed increasing the amount taken would increase efficacy as opposed to doctors' preference for regular ORS consumption. It also demonstrates a lack of understanding in terms of how the antibiotic should be taken. Four tablets taken in the same day is an overmedication, while only taking them for one day falls short of the five or ten day course which would be prescribed by a doctor. As a result the patient has taken four days worth of antibiotics in one day that he would probably have been advised by a

doctor to take once a day over ten days. From this example it is clear to see why concerns over antibiotic resistance exist within the medical profession and the literature. It is also clear why many doctors in this study expressed concerns over the use of Flagyl as a self-care practice for treating diarrhoeal disease. However, the manner in which medications can be purchased 'over the counter' also appears to be a contributing factor that should not be ignored. This will therefore be discussed in further detail within Chapter 7.

A number of limitations are apparent with this particular approach to measuring levels of safe and appropriate self-care practices for diarrhoeal disease. In particular, the absence of clinical enquiry (designed in the interests of participant anonymity) meant evaluations occurred on the basis of summarised accounts of participants' self-care practices. Naturally a full physical examination would provide a much more accurate assessment of symptoms and the illness itself, which may be influential in terms of assessing the treatment option undertaken by participants. Additionally, issues arise surrounding conflicts of interest and whether doctors are best placed to assess health care taken outside the sphere of biomedicine. Some of the doctors taking part in this exercise may view self-care as an important component of general health care, while others may perceive self-care to be an inferior form of treatment (Wilkinson et al, 1987). As such it is not possible to exclude the different philosophies of care doctors may be predisposed to. In line with this argument, doctors may also have limited knowledge on some types of self-medication and herbal remedies used in self-treatment. This was evident in a few cases where doctors were not familiar with some of the natural leaves used in some diarrhoeal disease treatments. As a result they were either unable to make an assessment or perceived the practice to be inappropriate on the basis that particular ingredients were not known to them. This applied to diarrhoea case 4 and dysentery case 8 in particular where four doctors did not provide a response due to lack of familiarity with one or more of the ingredients listed in the treatment description.

It should also be noted that more than 15 doctors were initially approached to participate in the ranking exercise however compliance was not always achieved. Some doctors were reluctant to engage with this process due to their own time constraints and lack of familiarity with traditional practices which they felt excluded them from accurate assessment of self-care. In one case the treatment descriptions were rejected as they lacked accuracy and credibility in the view of the doctor who did not believe

people engaged in any form of self-care, particularly those involving natural methods. In total, four doctors refused to participate in the assessment.

Although a number of limitations exist with the evaluation method, the results act as a guide to which types of self-care are adequate, safe and most importantly not harmful to the individuals' health and treatment process. This suggests that certain types of self-care can potentially be safely and appropriately used to treat types of diarrhoea and dysentery. In particular the use of ORS and mashed rice are very likely to be of benefit to the patient. However, it should also be noted that the disparities between qualified doctors' opinion regarding types of self-care practises highlight how difficult and subjective it can be to assess appropriate practises.

5.7 Safe and Appropriate: The lay-user perspective

The subjective nature of self-care and divergent opinions regarding safety and appropriateness from the biomedical perspective suggests these issues should also be assessed from the perspective of patients themselves. It is often suggested that there is little distinction in levels of knowledge between lay users and professionals (Blaxter, 2004). The main distinction resides in the informal, experimental and unwritten knowledge of the lay user. However, this does not imply greater levels of simplicity and it is widely acknowledged that people are health producers as well as consumers (Blaxter, 2004). It is on this basis that levels of safety and appropriateness were also examined from the patient's perspective in Chakaria and Domar.

Illness severity was regarded as an indicator for self-care efficacy and appropriateness. Many participants stated that the effectiveness of self-care diminished as the severity or 'seriousness' of an illness increased. Once an illness reached a critical stage of severity there was widespread acknowledgement that the use of self-care should be rejected in favour of accessing formal healthcare, usually in the form of qualified health professionals. This may be one of the reasons why the use of self-care for malaria was particularly low in the survey data (1%). It also demonstrates a level of health knowledge amongst the research households and how this understanding is applied to self-care adoption and health seeking behaviour in general.

An understanding of treatment practices was also demonstrated through the recognition

of limitations associated with self-care which reduce its applicability as a treatment response. In particular, 43.3 percent of participants from the survey questionnaire stated that self-care can make the patient more ill, while 41.2 percent believed the use of self-care does not guarantee better health. A further disadvantage was acknowledgement that self-care treatments were invariably slower in providing a successful cure compared to other formal and informal treatment measures (38.7%). This was particularly apparent in a number of discussions with participants when comparing the efficacy of biomedical treatments. The speed through which some medications can provide satisfactory results has been previously documented as a key factor in people's health seeking behaviour (Nichter, 1996). This holds particular resonance amongst impoverished households as the need to maintain a healthy body to ensure livelihood survival is greatly accentuated (Chambers, 1989). Certain types of self-care are thus limited in providing a 'quick fix' in Bangladesh to enable the patient to resume or continue livelihood practices;

> *"Sometimes it takes more time to cure a patient through the home treatments and so the patient can become worse. They can get more sick because it is slow to work so many people don't want to wait and then they prefer to go to the doctor for a quicker cure that will stop them from getting more ill…… Sometimes it is just not possible to wait as it's important to get a quick solution so we can be healthy. It is important for us to remain healthy otherwise how can we provide for our family, for our children...we are poor so we have to provide"* (Interview 9).

Therefore, one of the essential criteria in the use of medicines, including self-care, is the provision of a rapid solution to the illness. However, there is a widely held understanding amongst a high number of participants that a rapid treatment solution cannot be achieved through self-care. Despite knowledge of the inappropriate use of self-care in such situations and despite the need to achieve rapid treatment solutions, the use of self-care remains profuse.

Discussions on this topic also revealed that the failure of a particular self-care practice did not necessarily deter future use of the same method for identical or similar illness episodes if they reoccurred. Given the already low degree of self-care efficacy identified by participants (29.3%), combined with the slow provision of a cure offered by many of these practices, the reapplication of an already limited practise is intriguing. Previous research has suggested that many people want to be in control of their own disease treatment (Cunningham-Burley & Irvine, 1987; Shaul, 1995). However, findings from

this study indicate the lay user does not always associate self-care efficacy with safety and appropriateness of the type of self-care adopted. Concerns regarding safety and appropriateness may also be superseded by an individual's socio-cultural circumstances and a range of advantages associated with self-care.

5.8 Conclusions

This chapter has explored the meaning and practise of self-care in rural Bangladesh. This has included ascertaining local level perspectives of self-care terminology and the types of self-care undertaken to address various illnesses with some specific focus on diarrhoeal disease. The findings indicate that self-care is a widely practised response to a number of illnesses including diarrhoeal disease. Participants demonstrated that there is a range of differing terminology for self-care and differing types of responses which constitute self-care in the research sites within Bangladesh. This includes traditional, herbal and modern pharmaceutical health behaviours which can be implemented in isolation or as part of sequential health seeking behaviour.

Lay perspectives of self-care have also provided detail into the exact content of self-care practices, particularly in response to some common minor ailments and diarrhoeal diseases. The types of self-care documented at the local level were also assessed from a biomedical perspective in order to ascertain levels of safety and appropriateness. These discussions demonstrated that a number of self-care practices adopted in response to diarrhoeal disease in both Chakaria and Domar did not represent serious danger to individual's health and ability to respond to illness. Although many of the self-care methods were not readily encouraged by qualified health professionals some of the practices were deemed an adequate measure that would not detrimentally affect the patient or increase the severity of the diarrhoeal disease.

Within this chapter qualitative and quantitative analysis has shown the overall utilisation of self-care in two areas of rural Bangladesh. It has also provided lay and qualified health professional opinions about the meaning and practice of self-care. The following chapter will focus on the determinants of self-care adoption including gender, socioeconomic, age, location and education variables. Exploration at this level is designed to provide a more detailed understanding about who uses self-care and some of the reasons why self-care adoption takes place in the Bangladesh context.

CHAPTER 6: DETERMINANTS OF SELF-CARE ADOPTION IN RURAL BANGLADESH

"To begin to picture the resources and constraints…*the way the actor experiences them,* is to take a crucial step towards understanding why and how people do what they do."
(Wallman & Baker, 1996, p. 678, Italics quoted in original)

6.1 Introduction

The findings of the research presented so far in this thesis have documented the meaning and practice of self-care in rural Bangladesh. These have suggested that self-care is a common and widely understood concept which involves a range of traditional remedies, contemporary methods and modern pharmaceuticals. However, these actions do not take place in isolation as there are a range of factors which are influential in what types of self-care may be adopted, how it is adopted and why it is implemented by the individual and household. This chapter therefore explores the range of determinants which can play a role in influencing whether self-care is adopted commencing with who utilises self-care in rural Bangladesh. Additionally, the obstacles and constraints to self-care adoption and practice will be discussed, followed by the factors which facilitate the implementation of self-treatment in the Bangladesh context. Examination of the role of these various factors contributes to enhancing understanding of why self-care is used as a disease management strategy. It also provides enlightenment on some of the underlying and immediate processes which influence the types of self-care detailed in the previous chapter. This is key to establishing a more complete picture of self-care, which is ultimately designed to contribute to better policy and practice amongst sustainable health and risk reduction policy makers.

6.2 Who Adopts Self-Care in Bangladesh?

There is wide recognition that self-care is a hugely common response to ill health throughout many developed and some developing countries (Hardon et al, 1994; Phillips & Verhasselt, 2001). In the case of Bangladesh there has been some exploration of self-care in terms of generic measurement on numbers of people treating themselves (Ahmed et al, 2003; 2005; 2006; Cockcroft et al, 2007). However, there is a discernable lack of data on who adopts self-care and the influence differing demographic variables may have in a developing country context. The adoption of self-care in rural Bangladesh was therefore explored from gender, socioeconomic, age, location and

education variables. These variables have been widely documented as influential in the type of treatment response adopted (Ayeni et al, 1987; Field & Briggs, 2001; Needham & Bowman, 2003). Some similar effects have been recorded in the examination of self-care (Dean et al, 1983; Haug, 1989), although this remains limited for developing country contexts. To date no evidence on the determinants of self-care adoption has been documented in the literature for the case of Bangladesh and therefore this research provides an in-depth insight into this aspect of self-care.

As outlined in the previous chapter there is a relatively high degree of self-care use in Bangladesh. Data provided through quantitative analysis indicated that over two hundred survey participants, from a total of six hundred and thirty, had utilised self-care within the previous two months in response to ill health. The characteristics of those individuals who adopted self-care in the event of ill health are outlined in Table 6.1 below.

Table 6.1 Determinants of Self-Care Adoption

Characteristics	N	Numbers	Percentage
Age			
Elderly (>50)	155	59	38.1
Adults	473	168	35.5
Gender			
Male	266	90	33.8
Female	362	137	37.8
Menial Labour			
Dependent	499	185	37.1
Non-dependent	129	42	32.6
Literacy			
Literate	468	174	37.2
Illiterate	160	53	33.1
Education			
Some education	314	125	39.8
No education	314	102	32.5
Sex Household Head			
Male	545	201	36.9
Female	83	26	31.3
Location			
Matlab	195	85	43.6
Chakaria	195	57	29.2
Domar	238	85	35.7
Sample Size		628	

These findings highlight the slightly higher use of self-care amongst the elderly (38.1%), women (37.8%), and households dependent on menial labour (37.1%), literate

individuals (37.2%) and respondents with some level of formal education (39.8%). However, there was no significant difference between any of these characteristics except when comparing the influence of location where people in Matlab district had significantly ($p < 0.05$) greater use of self-care (43.6%) compared to those respondents living in Chakaria (29.2%) or Domar (35.7%) respectively.

These findings were replicated in the specific examination of self-care adoption in response to diarrhoeal disease. Table 6.2 shows the differing rates of self-care utilisation across age, gender, socioeconomic, literacy, education and location variables. Again there are slightly higher rates of self-care use for diarrhoeal disease amongst the elderly (18.1%) compared to adults under the age of fifty (17.1%). More women (17.4%), households dependent on menial labour (18.4%), literate individuals (17.7%) and respondents with some level of formal education (18.2%) had higher self-care use for diarrhoeal disease. Further statistical investigation through chi-square analysis revealed no significant differences ($p < 0.05$) between any of these variables. Each of these different characteristics will be explored in greater detail in response to illness and diarrhoeal disease in the following sections.

Table 6.2 Determinants of Self-Care Adoption for Diarrhoeal Disease

Characteristics	N	Numbers	Percentage
Age			
Elderly (>50)	155	28	18.1
Adults	473	81	17.1
Gender			
Male	266	46	17.3
Female	362	63	17.4
Menial Labour			
Dependent	499	92	18.4
Non-dependent	129	17	13.2
Literacy			
Literate	468	83	17.7
Illiterate	160	26	16.3
Education			
Some education	314	57	18.2
No education	314	52	16.6
Sex Household Head			
Male	545	95	17.4
Female	83	14	16.9
Location			
Matlab	195	28	14.4
Chakaria	195	37	19
Domar	238	44	18.5
Sample Size		628	

6.3 Self-Care and Gender

Gender is a widely reported determinant of health seeking behaviour (Ojanuga & Gilbert, 1992; Okojie, 1994; Shaikh & Hatcher, 2004) and was therefore explored within the context of self-care implementation, which remains largely gender neutral to date (Flemming et al, 1984; Green, 1985). Understanding the potential influence of gender could be essential to the practice of mitigating disease risk, particularly within a highly patriarchal society such as Bangladesh. Overall female morbidity prevalence rates (296.9 per 1000) were slightly higher than reported morbidity prevalence rates amongst men (259.7 per 1000); however, there was no significant difference ($p < 0.05$) in levels of illness between the sexes. Interestingly, levels of reported diarrhoeal disease were significantly higher amongst males (40.6%), compared to female respondents (28.1%) as indicated in Table 6.3 below. This figure is in contrast to the majority of data examining rates of diarrhoeal disease in South Asia which usually documents higher rates amongst women (Kosek et al, 2003). The findings may be related to the differing risks men are exposed to through livelihood practices outside the household. However, it has not been possible to examine this issue in further detail to identify additional influences and determinants for the reported high levels of male diarrhoeal disease incidence.

Table 6.3 Health Conditions Experienced by Male and Female Respondents

Illness[43]	**Male**		**Female**	
	Number	**Percent**	**Number**	**Percent**
Diarrhoeal Disease	108	40.6	102	28.1
Typhoid	12	4.5	21	5.8
Jaundice	30	11.3	36	9.9
Fever	130	48.9	145	39.9
Skin Disease	23	8.6	26	7.2
High Fever cough	59	22.2	54	14.9
Broken limbs	6	2.3	3	0.8
Malaria	7	2.6	13	3.6
Pneumonia	3	1.1	3	0.8
Mental Illness	1	0.4	3	0.8
Other	43	16.2	77	21.2
Sample Size	266		363	

Levels of self-care use were found to be slightly higher among women (37.8%) compared to male self-care adoption (33.8%). Although these findings are similar to

[43] Categories are not discrete

various speculative hypotheses concerning self-care and gender within the literature (Flemming et al, 1984; Dean, 1989), a significant difference was not found between male and female adoption of self-care in the rural Bangladesh context. This finding was replicated in the case of self-care use for diarrhoeal disease in which fractionally more women (17.4%) than men (17.3%) adopted self-care as a treatment strategy. Again no significant difference occurred for this particular illness which indicates that self-care may not posses strong gender dimensions.

Both men and women used self-care significantly more ($P<0.001$) than traditional healers, government hospitals, private clinics, and unqualified practitioners in response to ill health. These findings were replicated to the same level of significance for the same treatment providers in the case of diarrhoeal disease for both men and women (Table 6.4). Focus on self-care for diarrhoeal disease also highlighted greater self-care use across gender compared to consultation with a qualified doctor. Although the difference was not significant amongst males, self-care for diarrhoeal disease was significantly more ($P <0.001$) than doctor consultation amongst women.

The preference for self-care in comparison to other treatment providers is outlined in further detail in table 6.4. This table also shows women's health seeking behaviour does not appear to be disadvantaged due to their sex within a patriarchal society often associated with high levels of gender inequity and discrimination (Zaman, 2005). Survey findings indicate that women have higher levels of engagement with qualified doctors (49.4% compared to 38.7% for men) and Government hospitals (17.7% compared to 10.9% for men). These results may also be reflective of increased NGO activities in all three research sites (Perry, 2000), a growth in trained female health professionals (Kabeer & Mahmud, 2004) and the lower than expected results for female use of self-care.

Exploration of this issue through interviews and FGDs revealed a similar picture of self-care use across gender. Both men and women expressed knowledge and use of self-care for a variety of ailments and illnesses in interviews, focus group discussions and participatory techniques. A clear gender difference in either the extent to which self-care is used or the types of practices adopted was not apparent. There appears to be a common understanding of self-care, the decisions taken in regards to trying self-care and the types of methods which can be used.

Some factors in relation to gender were seen to be influential in the amount and timing of self-care administered. As mentioned in Chapter 3 cultural practices in Bangladesh often restrict women's levels of autonomy and movement (Zaman, 2005) which results in their reduced engagement with the labour market. Women are readily involved in indirect economic activities within and around the household such as care for livestock, fuel collection and some fabric preparation for petty cash (Ray-Bennett et al, 2010). However, women do not generally venture outside their home and village, particularly due to employment requirements. Recent survey findings from Chakaria revealed that only 4.5 percent of women were the primary financial earners compared to over 95 percent of men (Bhuyia et al, 2006). This gender segregation was seen as influential in terms of placing greater responsibility on women as the primary care givers during the initial stages of illness, especially if the illness is acute and rapid onset such as diarrhoeal disease. This point was expressed by one female focus group participant;

> *"Usually men are outside the home, so if someone is sick we usually have to take immediate steps. If a baby is sick the mother will usually try at first. If it's not working then when the father comes back he will take the baby to the doctor"*
> (FGD 12)

In the absence of a male presence in the household women may be forced to address any illness through self-care as their movements are circumscribed through cultural and religious practice in Bangladesh. The quote above implies that self-care treatment may be taken as an immediate step and as a temporary measure until external care can be accessed with the assistance of a male member of the family. Self-care is then used as a forced measure, one which is understood to be less effective than other forms of treatment, but a treatment which is attempted in the immediate onset of illness to provide some form of care. It should be noted that this was not necessarily the sole responsibility of the husband as many participants stated that visits to health practitioners could also take place with the accompaniment of a brother, brother-in-law or their father.

The issue of autonomy and movement in terms of health seeking behaviour was frequently expressed by a number of female participants in both research sites. Restrictions on women's ability to access formal or informal health care were a driving

force behind their health seeking behaviour. This has been previously reported in Bangladesh (Ahmed et al, 2006) with patriarchal norms and restricted financial capital documented as influential factors. Similar views were expressed in this research;

> *"…sometimes my husband doesn't stay at home for a long time, say about a month, so then who will take me to the doctor. I have to wait at home until he returns"* (Interview 45)

> *"The male member will take the patient to the hospital. We are women; how we can do this"* (Interview 20)

The key aspect of these restrictions was whether this increased the likelihood of self-care adoption. One interview with a woman from Domar appears to provide evidence in support of such a position;

> *"…the children's father is not always at home, so I can't go to the doctors when we want so it's easier to use this method (self-care) in the home"* (FGD 3)

This particular participant went on to explain how successful she thought self-care was in treating certain illnesses and perhaps high levels of faith and trust in self-care is also influential. However, her gender predisposes her to being in a position where self-care must be used as an interim measure at the very least while her husband is away from the household. It is perhaps an added benefit that the interim strategy adopted is effective enough for this participant to be comfortable with the enforced use of self-care.

One potential explanation for the lack of a significant disparity between male and female self-care adoption may reside in the male use of self-care during livelihood practices while working away from the household. Several male participants recounted methods of self-care undertaken as a result of injury or illness incurred during menial labour tasks. The use of leaves and bark were described as valuable means of stemming bleeding incurred through cuts. Similar materials are also occasionally used in response to skin infections which can occur when working for extended periods of time in water during rice cultivation or fishing. Diarrhoeal disease was also a common affliction and an illness that benefited from successful self-care at times when the patient was working in either remote areas or locations at great distance from their own household. In such contexts the work environment also became an arena in which knowledge acquisition

and sharing facilitated self-care adoption, a point captured by one male participant describing his sources of self-care information;

> "*I got a lot of this knowledge from the hillside. I was there with the Murong tribe and they told me a lot of useful things about treating these diseases… I was working out there cutting trees and I got diarrhoea. I was just sitting and feeling very unwell. It was not possible for me to do any work. I was just sitting. These Murong asked me why I was just sitting and not working, when they learnt that I was suffering from diarrhoea they gave me three bundles of these leaves and told me what to do with them and how to take them. They gave me choitzera pata, guava pata and ghoichcha pata. You have to crush them up and eat them with a little bit of salt. So they gave me three bundles of each of these types of leaves and told me what to do and how I should eat them. It was very easy to make it. It only took me a short moment, two or three minutes maybe and then I ate the leaves. At first I took this in the afternoon when they gave the leaves to me and I started to feel better very quickly and the pain began to disappear. After another hour I took some more. The same leaves again and then in the evening I took a shower and ate the final bundle of leaves. The next day I was completely fine, a full recovery I did not feel sick at all anymore. It is proven that this works. It works really well I would recommend it as a treatment. It is very good.* (Interview 29)

This narrative highlights both self-care information acquisition and the role many men play in implementing self-care methods themselves. Self-treatment may have occurred in this example due to the distance other care providers, such as family members, were from the patient. It may also be driven by the 'need for a healthy body' (Chambers, 1989) in the pursuit of livelihood income generation. However, the example demonstrates males' willingness to utilise self-care and thus it is not an action left in the solitary realm of the female care provider. The narrative also emphasises a sense of community and self-reliance amongst the workers that embody some of the key principles of PHC.

6.4 Self-Care and Age

The adoption of self-care amongst the elderly (≥50 years) was explored to ascertain if levels of self-care differed from those of younger people (aged 18-49 years). Research from Bangladesh indicates that the health care system is not able to cater towards the health needs of the elderly population (HelpAge International, 2000). This is also a section of the Bangladesh population which is increasing (Solomons, 2001) and reporting a high proportion of health issues (Kabir et al, 2003). Previous research is limited in respect to the role of age on self-care behaviour, although there are some

Table 6.4 Self-Care Compared to other Treatment Providers by Population Characteristics

Treatment Providers	**N**	Self-Care		Village Dr.		Qualified Dr.		Traditional Healers		Government Hospital		Private Clinic		Health Worker		Medicine Shop	
Characteristics		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Elderly	155	**59**	**(38.1)**	131*	(84.5)	70	(45.2)	29*	(18.7)	20*	(12.9)	14*	(9)	0*	(0)	24*	(15.5)
Adult <50	473	**168**	**(35.5)**	331*	(70)	212*	(44.8)	85*	(18)	73*	(15.4)	29*	(6.1)	5*	(1.2)	88*	(18.6)
Male	266	**90**	**(33.8)**	200*	(75.2)	103	(38.7)	43*	(16.1)	29*	(10.9)	18*	(6.8)	3*	(1.1)	34*	(12.8)
Female	362	**137**	**(37.8)**	232*	(64.1)	179**	(49.4)	71*	(19.6)	64*	(17.7)	25*	(6.9)	3*	(0.8)	78*	(21.5)
Poor	499	**185**	**(37.1)**	340*	(68.1)	227**	(45.5)	95*	(19)	75*	(15)	33*	(6.6)	5*	(1)	97*	(19.4)
Rich	129	**42**	**(32.6)**	92*	(71.3)	55	(42.6)	19**	(14.7)	18*	(14)	10*	(7.8)	0*	(0)	15*	(11.6)
Some Education	314	**125**	**(39.8)**	122	(38.9)	170*	(54.1)	52*	(16.6)	60*	(19.1)	24*	(7.6)	4*	(1.3)	51*	(16.2)
No Education	314	**102**	**(32.5)**	240*	(76.4)	112	(35.7)	62*	(19.7)	33*	(10.5)	19*	(6.1)	1*	(0.3)	61*	(19.4)
Literate	468	**174**	**(33.1)**	307*	(65.6)	226*	(48.3)	82*	(17.5)	79*	(16.9)	32*	(6.8)	4*	(0.9)	85*	(18.2)
Illiterate	160	**53**	**(37.2)**	125*	(78.1)	56	(35)	32**	(20)	14*	(8.8)	11*	(6.9)	1*	(0.6)	27**	(16.9)
Male HH	545	**201**	**(36.9)**	383*	(70.3)	236***	(43.3)	98*	(18)	73*	(13.4)	40*	(7.3)	5*	(0.9)	91*	(16.7)
Female HH	83	**26**	**(33.3)**	49*	(59)	46**	(55.4)	16	(19.3)	20	(24.1)	3*	(3.6)	0*	(0)	21	(25.3)
Matlab	195	**85**	**(43.6)**	118**	(60.5)	115**	(59)	47*	(24.1)	55**	(28.2)	9*	(4.6)	0*	(0)	39*	(20)
Chakaria	195	**57**	**(29.2)**	101*	(51.8)	109*	(55.9)	24*	(12.3)	26*	(13.3)	24*	(12.3)	5*	(2.6)	64	(32.8)
Domar	238	**85**	**(35.7)**	213*	(89.5)	58***	(24.4)	43*	(18.1)	12*	(5)	10*	(4.2)	0*	(0)	9*	(3.8)

Significance levels: *** P <0.05; ** P <0.01; * P <0.001 when population characteristics are compared to self-care

Table 6.5 Self-Care for Diarrhoeal Disease Compared to other Treatment Providers by Population Characteristics

Treatment Providers	**N**	Self-Care		Village Dr.		Qualified Dr.		Traditional Healers		Government Hospital		Private Clinic		Health Worker		Medicine Shop	
Characteristics		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Elderly	155	**28**	**(18.1)**	52 **	(33.5)	16	(10.3)	2*	(1.3)	26	(16.8)	8*	(5.2)	0		14***	(9)
Adult <50	473	**81**	**(17.1)**	176*	(37.2)	59***	(12.5)	2*	(0.4)	95	(20.1)	18*	(3.8)	0		45**	(9.5)
Male	266	**46**	**(17.3)**	118*	(44.4)	33	(12.4)	3*	(1.1)	58	(21.8)	9*	(3.4)	0		22**	(8.3)
Female	362	**63**	**(17.4)**	110*	(30.4)	42***	(11.6)	1*	(0.3)	63	(17.4)	17*	(4.7)	0		37**	(10.2)
Poor	499	**92**	**(18.4)**	181*	(36.3)	58**	(11.6)	3*	(0.6)	93	(18.6)	23*	(4.6)	0		50*	(10)
Rich	129	**17**	**(13.2)**	47*	(36.4)	17	(13.2)	1*	(0.8)	28	(21.7)	3**	(2.3)	0		9	(7)
Some Education	314	**83**	**(17.7)**	96	(30.6)	45*	(14.3)	2*	(0.6)	63	(20.1)	17*	(5.4)	0		24*	(7.6)
No Education	314	**26**	**(16.3)**	132*	(42)	30	(9.6)	2*	(0.6)	58*	(18.5)	9*	(2.9)	0		35	(11.1)
Literate	468	**57**	**(18.2)**	154*	(32.9)	63	(13.5)	3*	(0.6)	91**	(19.4)	20*	(4.3)	0		43	(9.2)
Illiterate	160	**52**	**(16.6)**	74***	(46.3)	12*	(7.5)	1*	(0.6)	30**	(18.8)	6*	(3.8)	0		16*	(10)
Male HH	545	**95**	**(17.4)**	202*	(37.1)	64**	(11.7)	2*	(0.4)	104	(19.1)	23*	(4.2)	0		48*	(8.8)
Female HH	83	**14**	**(16.9)**	26***	(31.3)	11	(13.3)	2**	(2.4)	16	(19.3)	3**	(3.6)	0		11	(13.3)
Matlab	195	**28**	**(14.4)**	40	(20.5)	19	(9.7)	1*	(0.5)	18	(9.2)	1*	(0.5)	0		13***	(6.7)
Chakaria	195	**37**	**(19)**	52	(26.7)	31	(15.9)	0*	(0)	40	(20.5)	25	(12.8)	0		41	(21)
Domar	238	**44**	**(18.5)**	136*	(57.1)	25***	(10.5)	3*	(1.3)	63	(26.5)	0	(0)	0		5*	(2.1)

Significance levels: *** P <0.05; ** P <0.01; * P <0.001 when population characteristics are compared to self-care

indications that the elderly are more likely to avoid seeking care with qualified professionals (Biswas et al, 2006). Elderly people in Bangladesh reported a slightly higher use of self-care practices in the event of ill health (38.1%) compared to younger adults (35.5%), however the difference was not statistically significant ($p > 0.05$). This is in contrast to research from other country contexts which have indicated greater levels of self-care engagement amongst the elderly (Dill et al, 1995). Self- care was adopted by significantly ($p < 0.01$) more elderly compared to use of traditional healers (18.7%). No significant difference was observed amongst the elderly when comparing self-care rates with utilisation of government hospitals or qualified doctors (Table 6.5).

In the case of self-care adoption for diarrhoeal disease, age was not a significant influence even though slightly more elderly used self-care (18.1%) compared to adults under the age of fifty (17.1%). Self-care remained a significantly more widely chosen response among the elderly ($p < 0.01$) compared to traditional healers (1.3%), private clinics (5.2%), and unqualified practitioners (9%). The use of self-care for diarrhoeal disease was not significantly more than consultations with qualified doctors (10.3%). Use of government hospitals for diarrhoeal disease was similar to that of self-care (16.8%), and was therefore not significantly different. While village doctors were again accessed by the highest number of people (33.5%), which was significantly more than the number of elderly engaging in self-treatments. These results are not consistent with the idea that the elderly in Bangladesh avoid seeking help through qualified professionals which therefore increases self-care uptake amongst this demographic group (Biswas et al, 2006).

Age related factors carried greater influence in terms of other aspects of self-care adoption. Self-care knowledge acquisition came almost exclusively from parents and elders who either passed this knowledge directly to their children or their self-care behaviours were observed when practised in the home. Relatively few other sources provided people with an opportunity to learn about self-care practices, however, these are discussed in greater detail later in this chapter. Participants that did receive self-care knowledge from parents and elders were also committed to continue this transfer of knowledge to the next generation. When children entered their late teenage years, early twenties, or when they started their own families was the opportune and most likely time for any self-care knowledge to be transferred, according to participants.

Qualitative methods also highlighted the influence of age in regards to faith in self-care practices. Efficacy of many self-care treatments was questioned by numerous participants under the age of fifty. These same levels of doubt were not readily expressed by the older generation. Findings suggested that the younger generation, particularly those individuals under the age of thirty, were more inclined to seek external support from the health care system. Whether that support was from formal or informal health practitioners was not always clear, but a preference for accessing modern medicines over traditional methods was clearly apparent. Several participants expressed the 'younger generation's preference for doctors' which had occurred due to the increased availability of doctors and the faster impacts of modern medicines in addressing an episode of ill health. Many of the younger participants interviewed indicated that knowledge obtained through school education was influential in their health seeking preferences for western medicine rather than any overt rejection of traditional methods used in self-care. However, this was not applicable to all participants in early adulthood as a small number of both men and women demonstrated high levels of faith and knowledge of many self-care practices for a number of minor illnesses such as fever, cough and diarrhoeal disease. In fact no significant differences were observed between any categories of age as outlined in the Table 6.6.

Table 6.6 Determinants of Self-Care Adoption by Age Groups

Age Groups	N	Numbers	Percentage
< 20	27	8	29.6
21-30	218	79	36.2
31-40	152	56	36.8
41-49	76	25	32.9
50 and above (Elderly)	155	59	38.1

Age and efficacy were also seen to interact in self-care adoption for the youngest generation. The vast majority of people widely acknowledged that self-care practises were much more effective for children and young infants compared to the results found when used on adults. Illnesses amongst young children were also afforded a higher status with greater concerns over illness severity, which increased the likelihood of parents seeking professional treatment for their children, particularly boys. Some participants expressed a lack of self-care efficacy in adults that did not occur when they were administered to children;

> "*Self-care works very well for the young children. When the children are young we take care of them, it is our responsibility so we do whatever we want. But when they grow older they like to go to the doctor more…but it is also true that the self-care is not effective when they are older. Many of them (self-care treatments) that work for the little ones do not work for us (adults)"* (FGD3)

Many participants suggested that their household stopped using self-care because their children had grown up. However, given the large size of families in rural Bangladesh and the practice of caring for children from extended families or from neighbours' households, the extent to which caring and supervision of infants stops is difficult to measure.

Age was also influential in the types of self-care practised. Elderly people interviewed in this research expressed a greater propensity to engage in the use of natural and traditional methods compared to middle aged adults and adults in their twenties. Specific herbal remedies were articulated by a number of the oldest participants accessed for this study. One example was a ninety year old male from Chakaria who discussed several methods of self-treatment for diarrhoeal disease and also demonstrated a number of these methods during the three occasions in which he was interviewed. One of his treatments for dysentery was as follows:

> *"Do you know that tree and that tree, you take a number of ingredients like keramarish root, dongolash root, dalim leaf, guava leaf and the bark from a mango tree. You grind these together and take the juice from them and add some sugar. This really works well to treat dysentery. You usually only have to take it once, maybe twice, if it doesn't work then maybe a third time, but it usually works the first time so I don't have to go to the doctor for dysentery because this is so good"* (Interview 16)

Clearly some very specific local natural ingredients are involved in this process, but it does demonstrate the types of herbal remedies that a number of elderly people had knowledge of and were prepared to use. This particular practice had been used over many years and was palpably effective in the eyes of the participant to the extent that he did not seek professional medical consultation in the event of dysentery. Similar methods were also applied to diarrhoea, but interestingly this particular participant would seek advice from a doctor if he suffered from fever because he was not able to use self-care effectively on that particular condition. Age could be heavily influential in these types of decisions through personal treatment history and life experience. Continuity of self-care practices is strongly influenced by personal perceptions of successful and failed self-care strategies (Dill et al, 1995) and the

same process is evident in rural Bangladesh. This influence on self-care decision making and actions was discussed previously in greater detail in Chapter 5.

6.5 Education, Literacy and 'Ignorance'

The adoption of self-care was also examined in terms of education and levels of literacy amongst the survey population. Background data obtained through the survey process enabled identification of illiterate[44] individuals and the levels of education achieved by those participants who had obtained some schooling. As shown previously in Table 6.4, a slightly higher number of illiterate people (37.2%) adopted self-care in response to ill health compared to literate individuals (33.1%). This outcome was not replicated when analysing self-care use in response to diarrhoeal disease in which 16.6 per cent of illiterate people were found to use self-care compared to 18.2 percent of literate people. However, in all cases these differences were not statistically significant. It was also observed that a slightly higher number of people with some level(s) of education adopted self-care (39.8%) compared to participants with no education (32.5%) in response to ill health (Table 6.4). In the case of responding to diarrhoeal disease people with some level of education again had a slightly higher rate of self-care use (17.7%) compared to people with no education (16.3%). No significant differences were observed.

Levels of literacy and education are often deemed to be important indicators in appropriate health seeking behaviour (Shaikh & Hatcher, 2005) and in relation to satisfactory adoption of self-care (Levin-Zamir & Peterbug, 2001). Although quantitative data from this research indicates education and literacy are not significant determinants in the use of self-care and the use of self-care for diarrhoeal disease, a small number of participants from the villages offered a different opinion. They felt levels of ignorance created by a lack of knowledge and health education was detrimental to any attempts to apply medical treatments without proper consultation from qualified health personnel.

> *"As I'm ignorant and if I try to practice my own methods won't I make mistake with my health?"* (Interview 12)

> *"It's a problem with the patients…because of lack of knowledge and because they are ignorant they are not maintaining the dose. Doctor has given the*

[44] This was defined as someone who is unable to read or write, or someone who is only able to sign their name

> *right medicines but as they don't know about this they don't take the right dose and they create problems."* (Interview 22)

The latter participant had achieved an education up to the age of sixteen and stressed the importance of this experience in her understanding of disease risks, treatment response and the ability to appropriately undertake forms of self-care. In the majority of cases she believed that self-care should not be used unless applied to the treatment of minor conditions such as fever, cough and colds. Engagement with medical professionals was a prerequisite for all other health conditions. She claimed this ideology had been instilled through her experience within the education system with teachers playing a pivotal role in providing health education messages. The knowledge acquisition described by the participant exemplifies a fundamental PHC principle of greater health education for females (Talbot & Verrinder, 2005). However, it was implied that these messages had a focus on accessing the healthcare system while concepts of self-reliance and types of self-treatment did not feature prominently according to the participant.

The notion of ignorance was a key topic of discussion with several health providers in both research sites and with health research and policy personnel interviewed in Dhaka. Doctors in particular were very critical of the levels of health knowledge villagers demonstrated. They felt this left people in a weakened position to be able to correctly respond to illnesses in an appropriate fashion. In many cases doctors expressed concerns about people using self-care in response to ill health stipulating that it occurred due to inadequate understanding of the illness and the treatment actions that should be taken according to the biomedical model. Through this perspective a lack of appropriate knowledge thus becomes a determinant in the adoption of self-care;

> *"It is their ignorance about their health problem so they don't even sometimes realise the intensity level of their disease so they sometimes don't care to go to the doctor and they think that it will be possible for them to take some treatment on their own."* (Key Informant 8)

The belief that ignorance drives individuals to self-care is extremely narrow and fails to acknowledge the range of other contextual factors such as age, socioeconomic status and culture as outlined within the current and previous chapter. Failure to recognise the broader determinants by particular health care professionals reveals an interesting disparity between lay and professional interpretations of self-care adoption. This is a point which will be discussed at greater length in Chapter 7.

However this sentiment did not apply to every illness episode and some key personnel participants conceded that self-care could be appropriately used in response to certain conditions, including diarrhoeal disease. Importantly education was regarded as a key mechanism to supporting and improving self-care adoption at the community level. The success of ORS programmes throughout Bangladesh, which was also evident in each of the three research sites in this study, acted as key evidence in such household focussed strategies. This initiative was acknowledged by health professionals as evidence of the potential for self-care if adequately supported by the health profession in terms of education dissemination and appropriate monitoring of care which takes place within the household;

"If they take oral saline it's okay because the government have approved it and the ORS fills up the lack of salt and water in patients' blood, so they can take this at the primary level. I don't have any problem with that. But I would also suggest that a lot of health education also needs to take place" (Key Informant 4).

Levels of education, literacy and ignorance thus appear to play a strong role amongst many health professionals and some participants at community level, in their understanding of self-care adoption. There is also a suggestion that education, already a key feature of PHC and health promotion, can act as mechanism in supporting existing self-care practises, strengthening the likelihood of appropriate self-care and offering the possibility for health professional support of certain home-based methods. The potential this represents for better integration of self-care into the wider healthcare system will be discussed in more detail in Chapter 7.

6.6 Location: Chakaria, Domar and Matlab

The survey also explored the potential influence of geographical location on people's self-care behaviour. Findings revealed a strong variation in self-care adoption in each of the three survey questionnaire research sites. The highest level of self-care use in response to illness was found in Matlab (43.6%) which was significantly different ($p < 0.01$) to self-care adoption in Chakaria (29.2%), but not in Domar (35.7%), as shown previously in Table 6.4. Despite these variations between location all three areas showed significantly ($p < 0.01$) higher self-care use when compared to traditional healers, government hospitals, unqualified providers, health workers and private clinics. The use of village doctors and qualified doctors were again accessed by a higher number of people in Matlab (60.5% and 59% respectively) and Chakaria (51.8% and

55.9% respectively). However, people in Domar reported significantly ($p < 0.01$) more self-care adoption (35.7%) in comparison to reported use of a qualified doctor (24.4%) when responding to illness. This was replicated in Domar for the case of diarrhoeal disease in which self-care use (18.5%) was significantly more ($p < 0.05$) than qualified doctors (10.5%) (as shown in Table 6.5). Distance has previously been documented as influential upon health behaviour (Muela et al, 2003, Needham & Bowman, 2003) in which reduced distance can increase the likelihood of engaging with the health care system (Field & Briggs, 2001). As a result, this barrier to health care access may lead to greater engagement with other forms of treatment seeking behaviour such as self-care.

Significant differences were also observed across all three research sites in terms of higher self-care adoption compared against private clinics and traditional healers, as outlined previously in Table 6.4. Treatment of diarrhoeal disease through Government hospitals as opposed to use of self-care revealed some differences across the three research sites as higher numbers were recorded in Chakaria and Domar. However, in Matlab more people adopted self-care, although the difference was not significant.

The potential influence of different determinants on self-care uptake was also explored within each of the three research sites for the use of self-care in response to ill health (Table 6.7) and adoption of self-care for diarrhoeal disease (Table 6.8). Very few significant differences were observed when comparing self-care determinants within and across each of the three research site locations in response to ill health and diarrhoeal disease. Chi-squared analysis identified that significantly more ($p < 0.05$) poor people in Matlab adopted self-care in response to ill health compared to poor survey participants in Chakaria. This difference may be related to the extensive health service provision and degree of PHC implemented within this area through NGO provision as outlined previously in Chapter 4. The number of health interventions within Matlab has led to the criticism that the population are no longer representative of rural Bangladesh (Ross, 1996). Despite this, the higher rates of self-care present interesting questions in terms of the potential positive implications increased PHC and healthcare provision can have on self-care adoption. In the case of Matlab higher numbers of CHWs and greater levels of health information could serve to facilitate increased engagement with self-care behaviours amongst the poor. However, further in-depth review of this specific geographical context is required to provide additional analysis and insight into the influence specific local dynamics impart upon self-care adoption.

Table 6.7 Self-Care Adoption by Location and Population Characteristics

Characteristics	Matlab		Chakaria		Domar		Total	
	N	%	N	%	N	%	N	%
Male	20	40	21	28.4	49	34.2	90	33.7
Female	65	44.8	36	29.8	36	37.5	137	37.6
Poor	80*	45.5	44	28.8	61	40	185	37.1
Rich	5	26.3	13	31	24	35.3	42	32.6
Elderly	22	40	11	27.5	26	43.3	59	38.1
<50	63	45	46	29.7	59	33.1	168	35.5
Literate	74	44.8	44	29.1	56	36.8	174	37.2
Illiterate	11	36.7	13	29.5	29	33.7	53	33.1
Educated	53	45.7	35	34	37	38.9	125	39.8
No Education	32	40.5	22	23.9	48	33.6	102	32.5
Male Head Household	71	45.2	49	30.4	81	35.7	201	36.9
Female Head Household	14	36.8	8	23.5	4	36.4	26	31.3

* p <0.05 compared to Chakaria

Table 6.8 Self-Care Adoption of Diarrhoeal Disease by Location and Population Characteristics

Characteristics	Matlab		Chakaria		Domar		Total	
	N	%	N	%	N	%	N	%
Male	9	18	12	16.2	25	17.6	46	17.2
Female	19	13.1	25	20.7	19	19.8	63	17.3
Poor	26	14.8	30	19.6	36	21.2	92	18.4
Rich	2	10.5	7	16.7	8	11.8	17	13.2
Elderly	9	16.4	7	17.5	12	20	28	18.1
<50	19	13.6	30	19.4	32	18	81	17.1
Literate	24	14.5	28	18.5	31	20.4	83	17.7
Illiterate	4	13.3	9	20.5	13	15.1	26	16.3
Educated	16	13.8	22	21.4	19	20	57	18.2
No Education	13	16.5	15	16.3	25	17.5	53	16.9
Male Head Household	23	14.6	30	18.6	42	18.5	95	17.4
Female Head Household	5	13.2	7	20.6	2	18.2	14	16.9

6.7 Socioeconomic Status

The use of self-care was explored from a socioeconomic perspective by examining differences between 'rich' and poor households. The former was defined on the basis of livelihood asset ownership (e.g. cattle, land, household) and no dependency on the sale of menial labour to generate household income. A lack of livelihood assets and dependency on menial labour implied the household was poor (Ray-Bennett et al, 2010). Overall, levels of reported diarrhoeal disease were slightly higher amongst 'rich' households (36.4%) when compared to poor households (32.6%); however this difference was not statistically significant. These findings are in contrast to the majority of data examining rates of diarrhoeal disease in South Asia which usually documents higher rates amongst poor households (Kosek et al, 2003).

As mentioned previously (Section 6.1), slightly more poor households adopted self-care (37.1%) in the event of illness when compared to 'rich' households (32.6%). This was also replicated in the specific case of diarrhoeal disease (18.4% of poor households and 13.2% for 'rich' households). However, neither of these differences were statistically significant ($p > 0.05$). Both poor and 'rich' households utilised self-care in the event of ill health significantly ($p<0.01$) more than government hospitals (15% for poor, 14% for rich households), private clinics (6.6% and 7.8% respectively), traditional healers (19% and 14.7% respectively), and unqualified practitioners (19.4% and 11.6% respectively), as outlined in Table 6.5. The use of self-care across both socioeconomic boundaries in response to diarrhoeal disease was also significantly higher ($p <0.01$) than accessing private clinics (4.6% for poor households and 3.2% for 'rich' households), traditional healers, health workers and unqualified practitioners such as those dispensing drugs.

Differences between socioeconomic status occur when comparing levels of self-care with consultation of qualified doctors for diarrhoeal disease. Exactly the same number of 'rich' households (13.2%) adopted self-care and consulted qualified doctors, however, significantly more poor households practise self-care rather than consulting a qualified doctor (11.6%) ($p< 0.01$). This indicates the influence of payment for qualified practitioners is an influential factor in terms of responding to diarrhoeal disease.

Previous research has indicated that in many cases it is the poor and vulnerable who are most likely to engage in self-care (Propper, 2000, Leyva-Flores et al, 2001; Khe et al,

2002; Ahmed et al 2005; 2006). Poorer households with reduced asset availability are more likely to rely on self-care as it can limit their purchasing capacity to engage with health services (Pagan et al, 2006). Although significant differences were not established between socioeconomic status through the quantitative component of this research, interviews and focus groups revealed the impact poverty can have on determining people's use of self-care. This was centrally focussed on the ability to pay for health services which the majority of participants revealed to be a hugely challenging issue. The challenge of paying for health care amongst the poor and vulnerable is widely documented throughout the developing world (Russell, 1996; 2005). This includes the detrimental impact payment for health care can have in either reinforcing poverty or pushing households into poverty (Sen, 1997; Hulme, 2003). In terms of the focus of this research the effect of reduced purchasing capacity often resulted in increasing the likelihood of adopting self-care;

> *"It is the main problem with our financial status, we don't have enough money, and if we had money I would never take medicines on my own and would always go directly to the doctor……Yes I would be better by the doctor, though sometimes I want I cannot go to the doctor, there are many problems. For example I'm suffering from fever or I'm ill maybe it serious, but if things go wrong with my financial status I can't afford to go to the doctor. In this case I try to take care of myself in my home. I try to manage as best as I can and however I can."* (Interview 32)

> *"Treatment needs time and money to see the doctor but it's better to use the home methods as it does not cost money and it's easier to access the treatment for the villagers. The medications from the doctor need money and poor people have no money so what will we do without the herbal treatments. Even the government hospital requires money for treatment so we have to depend on these traditional methods."* (Interview 6)

The above quotes from socioeconomically poor participants were reinforced by findings from the questionnaire survey in which 87.6 percent viewed saving money as an advantage to using self-care. This was also ranked as the most important advantage to using self-care; it therefore appears to be heavily influential in determining the use of self-care in rural Bangladesh. Participants from poor households often felt that 'rich' households did not have a problem in accessing healthcare as their substantial levels of purchasing capacity meant paying for treatment did not pose a problem. They were therefore more likely to seek consultation from qualified health professionals rather than use self-care in the opinion of many socioeconomically disadvantaged participants involved in this research. The questionnaire survey findings suggest a more complex

picture as vast numbers of 'rich' households still adopt self-care in the event of ill health and also specifically in response to diarrhoeal disease. These numbers are slightly lower than poor households but still represent a considerable amount of 'rich' households. Levels of finance and disposable income available for health care expenditure may not necessarily be the primary or sole influences on self-care adoption amongst many richer households in Chakaria and Domar.

6.8 Cost-Effectiveness

The cost of healthcare services is widely documented as a prominent factor in health seeking behaviour as it can deter or delay patients from seeking appropriate care (Russell, 1996; 2005). The economic burden of health care has become a key force in triggering impoverishment or pushing households into greater levels of destitution (Fabricant, 1999; Meesen et al, 2003; Sen, 2003; Russell, 2004). Although a range of studies have explored this issue within developing countries the cost implications of adopting self-care have not been widely recorded (Richardson, 2005). The current research attempted to investigate people's levels of expenditure in relation to their own self-care practises and compare this to the finance required when seeking healthcare from other treatment providers in rural Bangladesh. Participants were asked throughout interviews and focus groups how much they spent on the self-care they described when responding to ill health. They were also asked how much they spent to treat the illnesses described when or if they consulted local health practitioners. A stark contrast in expenditure was evident across both research sites and was summarised by one participant describing the cost of self-care and consulting health professionals;

> *"If we visit the doctor we have to pay but if we do it ourselves we can do it for maybe only five or ten taka. The doctor will cost maybe 50 taka or maybe 200 taka and then there is also the rickshaw. More money, more money we don't have, so it is difficult. But if we do it ourselves the cost is almost nothing, maybe only a little money for medicines……if we use the herbal leaves it is free for us"*
> (FGD 10)

Although there is some disparity in the costs quoted by the participant for professional care it remains substantially more than the costs of self-care. Interviews and focus groups continued to reveal a diverse range of costs for treatment which were heavily dependent on the type of illness and whether the health provider was qualified or

unqualified. The majority of participants' health care expenditure ranged from 50 taka to 500 taka. More consistent costs were associated with transportation required to access health providers in Chakaria and Domar. Both research villages in Chakaria and Domar were located beyond the immediate vicinity of the nearest local towns in which the majority of health providers and hospitals are located. These local contexts are previously described in detail in Chapter 3. As a result of the distances to the government hospitals, private clinics, doctors' chambers and some other health providers, people in Muhuripara and Chikkonmati must pay for rickshaws or taxis. These costs were between 30-40 taka to travel to the town of Charinga in Chakaria and 20 taka to Domar town. An immediate distinction was drawn between engaging with health providers and self-care as the latter rarely required any costs for transportation. This was a huge advantage in the opinion of many participants including a female resident of Muhuripara;

> *"…some treatments need time and money and they are far from here so we have to pay for the rickshaw. These (self-care) are very good. They are available here in this place easily so it is much quicker to get the medicine and we don't spend the money. We are poor people. It is difficult for us, but this means we save money…..we save money on not travelling. This is not required for self-care. We can get this in our village*" (Interview 6)

Further advantages to the cost-effectiveness of self-care were described by participants in Domar and Chakaria;

> *"If we want to buy medicines then we need money, but if we are making this medicine then we are saving money"* (Interview 10)

> *"Using this practice (self-care) I'm saving money. If I had to take my husband to the hospital I would have to spend money. I tried myself and he was okay. This is how I save money"* (Interview 38)

In the specific case of treatment for diarrhoeal disease the locational advantages of self-care are reinforced by the costs of self-care treatments which are either free or incur minimal expenditure. Traditional remedies using natural ingredients collected from the locality of participants' households do not require any cash payment. Other forms of self-care widely practised by participants in response to diarrhoeal disease such as use of ORS or self-medication with antibiotics are relatively cheap in comparison to the expenses incurred through consultation and visits to qualified doctors, hospitals and to some extent village doctors. Packets of ORS were sold locally for between three and five taka (the higher price was usually for flavoured ORS). Locally available antibiotics

that could be purchased without a prescription were available for three taka per tablet in the case of Flagyl. This was identified by a large number of participants as a treatment for diarrhoea and dysentery as outlined in the previous chapter. A smaller number of participants identified a second antibiotic Cotrim as a treatment for diarrhoeal disease which costs thirteen or fourteen taka. Overall these self-care expenses are considerably less than the costs associated with treatment from health providers. Participants described paying between 50 and 500 taka for treatments for diarrhoea and dysentery at government hospitals and through consultation with qualified doctors. More severe cases which required hospitalisation led to a dramatic escalation in costs as highlighted by one male participant who sought treatment at a local private hospital;

> *"My mother had diarrhoea about three weeks ago. I am a rickshaw puller so I took her to (Private Hospital in Chakaria) because her situation was bad. I had to spend 1,200 taka. She was admitted for one night and this is what cost the 1,200 taka, but it included the medicine and the injections"* (FGD 11)

This example demonstrates the striking costs required to treat a relatively common and preventable illness which is endemic throughout Bangladesh. It also indicates that people take into account perceptions of illness severity in terms of their treatment decision making and in this case self-care was rejected in favour of obtaining professional care. However, it is the cost of treatment for diarrhoeal disease provided through self-care which is a determinant for many households' adoption of home-based methods.

6.9 Household Relations and Community Networks

For many households in rural Bangladesh dealing with illnesses such as colds, fevers, and diarrhoeal diseases is a normal reality. Many of the discussions and interviews revealed the role other family and community members play in facilitating and supporting the adoption of various self-care strategies. These relationships were explored to add to the relatively small evidence base for the role of social support and its impact on the adoption of self-care. Particularly within the developing world context the role of the family can be important in pooling resources and modifying livelihood strategies to cope with 'shocks' caused by ill health (Moser, 1998). Family assistance can also act as a preliminary safety net in health seeking behaviour and provision of care to sick individuals (Edgeworth & Collins, 2006). Findings from Chakaria and Domar reinforce this notion as highlighted by one male from Chakaria;

> "*I have to rely on my family. If I get sick then they will help me…….They can provide me with the medicines if I am not able to go to the pharmacy, or sometimes they tell me what to do and what medicines to take. This has happened before. My father has told me about his experience and he can then tell me how to get a cure or treatment. It is the same with my mother, she has some knowledge about medicines which will work and she can make some of these in the home. You know my wife is very good as well, but if she gets sick then my parents can also help her and we have these friends who can also help."* (Interview 40)

The participant also went on to explain the important part his neighbours played in helping his wife travel to hospital during pregnancy complications. Several other participants identified the role of friends and wider family networks in providing advice on treatment options, assisting in herbal treatment preparation or travelling to the local shop or pharmacy to purchase medications on behalf of the patient. This was captured by the following male participant;

> *"Just a few days ago I had dysentery so I asked people around me what to do, I sought their suggestions. They told me to go to the houjour and get some soura poura (blessed water), then I drank it and after that I didn't have to go to the doctor."* (Interview 41)

These household and wider social networks not only act as a safety net in terms of health seeking behaviour, but also act as a mechanism to facilitate self-care in circumstances where this treatment option may not have been adopted. Several examples from Muhuripara captured this issue through household connections to one particular individual. This was an educated middle aged male from a household with reasonably high socioeconomic status who has been trained in basic levels of healthcare. First through a previous local NGO programme and secondly through his own experience running a homeopathic medicine shop, although this business had been closed for four years. Five households in the village either sought advice or used the individual to purchase the required medications for their particular illness, as explained by one female participant discussing treatment for her daughter's diarrhoea;

> *"At first I asked Mohamed*[45] *to bring medicines and saline and we tried to use this for the first two days. But the baby was still sick so we had to visit the hospital. When we went there Mohamed came with us"* (Interview 15)

[45]Names have been altered in line with ethical principles to ensure participant anonymity

In this case the purchase of ORS was advised as a first resort. Other cases revealed a similar picture where home based care was encouraged for cases of diarrhoeal disease. However, in more serious cases Mohamed actively encouraged the patient to seek hospital care either when self-care strategies failed or for complications during delivery. Through further exploration the reasons for seeking regular support from this individual came to light;

> *"He has good knowledge in these types of problems. He used to work for (Local NGO) a few years ago and he is someone we can trust to help us. He is well known here and has always helped a lot of people. It's good for us. He doesn't ask for any money and he lives close by so we can always ask him for assistance…he is a good man, I have known him for a very long time. Their family owns lots of land over there towards Islamnagor, and his cousin is married to one of my cousins, so I consider him family as well."* (Interview 15)

This type of informal support was more frequent in Muhuripara when compared to the research village in Domar. Higher levels of social network support may be due to the closer locality of households within the village compared to the more disparate spread of *baris*' across the larger geographical size of Chikonmati in Domar. However, the role of immediate family was still a source of health information, treatment decisions and some self-care preparations. All of which supports the notion of the Bangladesh family as a vital support system crucial in responding to ill health (Zaman, 2005). Findings indicate that the same principle can be applied to family support in self-care adoption.

The instrumental nature of close kinship and wider community networks which facilitate the adoption of self-care is in contrast to the use of formal support networks provided by the healthcare system such as CHWs. The low use of CHWs in seeking advice and provision of support was in contrast to some previous research (Winch et al, 2005). However there were similarities with findings from Ahmed & Hossain, (2007) in terms of CHWs support for diarrhoeal disease. Low CHW provision in this area highlights one aspect in which household self-care utilisation could be better supported. This issue is discussed at greater length in the following chapter.

6.10 Obstacles and Constraints to Self-Care Adoption

6.10.1 Doctor Patient Interaction

As noted within the previous chapter (section 5.5) there is a considerable degree of sequential self-care actions undertaken in rural Bangladesh. This involves the use of self-care as the primary treatment measure which is replaced by accessing other treatment providers if the self-care practice(s) does not provide symptom alleviation or successful treatment from the perspective of the user. Numerous participants relayed experiences of sequential self-care in which professional medical consultation was sought after the use of self-care that either failed or only provided a temporary or partial solution to the illness. The following interactions with health professionals were discussed to understand the levels of interface between patient and doctor and how this affected their understanding and future use of self-care. Although a number of participants articulated a good relationship and level of interaction with their doctor many others were more disparaging in their assessment of the care received. Negative experiences and perceptions of health care provision have been widely studied in developing countries, including Bangladesh, outlining the detrimental impact this can have on people's health seeking behaviour (Aldana et al, 2001). In terms of the specific examination of self-care, negative interactions between doctors and patients became an area which presented possible constraints to people's self-care behaviour.

Participants were asked to discuss whether they communicated with health professionals about any previous self-care they had attempted in response to the illness they were suffering. The vast majority of participants answered negatively, blaming the reaction of the doctors for their refusal to fully communicate about their prior treatment behaviour. The feelings expressed are captured by the comment below by one female participant from Domar;

> *"…usually they (Qualified Doctor) forbid us to take this, they scold us. They say 'if you can treat yourselves why are you here? Why are you visiting me?' They say this tola oushudh (herbal medicine) is no use right now, that they don't work……the herbal medicine doesn't work now. If we tell the doctor that we have taken the herbal medicine they say that this has created another complication, another disease. They tell us 'don't be a doctor yourself'."* (Interview 25)

The sentiment of 'being in trouble' or 'scolded' by doctors for using self-care was commonly recounted during interviews and focus groups. Several participants stated that 'doctors get angry with us' for using self-care. Even when participants believed that their own treatment measures were in the best interest of treating their illness and had even produced positive health outcomes, a lack of support from professionals was still

evident. This was highlighted by one elderly male participant when discussing whether he told the doctor about his use of self-care;

> *"It depends if the result is good. If it is good then I will inform the doctor. If it is a bad result then I won't tell him. I am afraid he will get angry with me…The doctor doesn't encourage anyone to use self-care and they don't encourage people to tell them about using self-care. If I have a good result from self-care and I tell them they don't say anything."* (Interview 30)

These doctor patient interactions are reminiscent of Pigg's (1995) view that biomedical practitioners devalue indigenous practises in order to distance themselves from traditional approaches in an attempt to move towards modernisation. Self-care methods appear to be strongly associated with traditional forms of healthcare that represent inefficient and dated treatments. If more culturally sensitive approaches were applied in such contexts to avoid patient alienation the disconnect between medical professionals and self-care users could be minimised.

The safety and appropriateness of self-care is widely discussed in the literature as a major concern for promoting greater responsibility amongst individuals to respond to their own health conditions (Abosede, 1984). This argument is particularly applicable to developing countries such as Bangladesh where low rates of literacy and health knowledge may lead to incorrect health seeking behaviour without any consultation or guidance from health care professionals (Ahmed et al, 2006). These concerns were readily expressed by doctors in Bangladesh who were interviewed for this research, some of which are highlighted in Chapter 5 (section 5.5). However, the key message over safety concerns regarding self-care appear to be misunderstood by several participants as they have been clouded by the nature in which doctors express their reservations regarding patients' use of self-care. These safety messages are further submerged by some generic perceptions, whether real or not, regarding the ethics and best practise of professionals in the health care system. This issue was relayed by one female participant as she discussed levels of interaction with her doctor in Chakaria;

> *"I cannot tell him about the self-care treatments which I have previously used for my illness because the doctor will not support me in my doing so as they want their patients to buy medicines from their pharmacy so they can maintain their own business and money because they get the commission because they advertise for certain pharmaceuticals. They will get angry with us; do you know what they will say to us? 'If you take one medicine for*

> *another illness you will be in more trouble!' He wants us to buy the drugs they advertise for"* (Interview 35)

The quote above implies that perhaps the message of appropriate self-medication was provided by the doctor, with particular concern for the misuse of medicines by taking too many different types of medication. However, this is superseded by aspects of corruption from the perspective of the participant with no recognition of appropriate self-medication. If aspects of corruption are in fact real then the issue of support for self-care through the doctor patient exchange may become clouded by conflicts of interest within the professional healthcare sector. Professionals may be more inclined to protect their own interests as high demand for care ensures financial income through patient fees and potentially through the prescription of certain medications.

These negative perceptions of many doctor patient interactions were also acknowledged by some of the qualified doctors who were interviewed in both Chakaria and Domar. A lack of time to see and speak to patients properly was suggested by some of these participants as a reason for little or no exploration of patients' previous treatments prior to consultation at the doctor's chamber. Given the heavy burden placed on the health system through extreme demand side factors and lack of suitable infrastructure, staffing and training (Chaudury & Hammer, 2003; Cockcroft et al, 2004; Mercer et al, 2005), this is likely to impose significant demands on doctors' time. During fieldwork in rural Bangladesh it was evident that many doctors faced a huge patient case load on a daily basis. However, some of the doctors interviewed implied additional reasons for poor communications with patients which concurred with villagers opinions about the type of support provided to patients;

> *"Doctors should be friendly and frank to the patients so that people can face the problem. But in our country when the patients enter my chamber they think inferior because they think the doctor's chamber is like the army chamber, so there is a gap."* (Dr. Private Hospital Key Informant 6)

This quote suggests that there is a class gap which may both inhibit people from socioeconomically disadvantaged backgrounds to feel open and comfortable to fully express their health problems and previous treatment actions. Although this is not unique to Bangladesh, the patriarchal society governed by highly conservative Islamic laws in which class stratification is widely recognised may accentuate feelings of

inhibition (Zaman, 2005). It also sheds some light on how some doctors may potentially perceive their patients. The participant expanded on some of these issues;

> *"I should treat a patient like my friend, as my father, who is like my father, who is like my mother then this problem will be reduced… but many of the doctors their behaviour is not always so good. You know we study like the western doctors and study the behavioural sciences but this is not applied in this country. There is a lack of this behaviour. And so many doctors do not behave well with the people they do not apply this behavioural science……another problem is the wrong motivation. It is not for the people but it's for the selfish reason. If doctor is posted there (rural area) he does not be concerned with anything, just only for duty and going to the office, do the operation and then go back home. His motivation is not so much. And doctors think that, in our country especially, about the money (laughter) in our country doctors have a bad reputation…"* (Key Informant 6)

Taken either collectively or individually the outcome of these factors highlighted in the quote above are detrimental to the doctor patient relationship in general. They also provide some obstacles to the manner in which patients are able to receive information, guidance and/or support from qualified health professionals in terms of current and future self-care adoption. The consequence of the negative interactions with doctors was for participants to either restrict or stop levels of communication with doctors regarding their use of self-care. As a result an opportunity is lost to provide a supportive environment which can guide how people use self-care for various illnesses.

It has been argued that health professionals are in a key position to empower patients through enabling language designed to motivate and facilitate behaviour change towards self-care adoption (Chambers, 2006). Health professionals also have the opportunity to identify what self-care practices are adopted by patients. By making general enquiries into the types of self-care employed, why self-care treatment was applied and what the outcomes have been on the patient's health (positive or negative), professionals can ascertain the suitability of such practices (Dill et al, 1995). The manner in which they obtain the information and the language used to support appropriate self-care or offer advice against inappropriate practice can be a crucial avenue in supporting local people's future self-care strategies. Findings from this research indicate that a platform of patient empowerment is not provided through the majority of doctor patient interactions and the language used by health professionals is neither motivating nor supportive of self-care. In many cases patients feel they are in trouble for using self-care, while others receive no feedback at all. These issues are discussed in further detail

in the following chapter.

According to Hogviatana (1987) healthcare programmes and professionals that fail to adequately understand the social and cultural processes of self-care are likely to do more harm than good. As the majority of doctor patient communications failed to provide a positive empowering environment for patients future self-care adoption the impact of this interaction was examined further. Participants were asked how they felt about the lack of support, communication and information from doctors, as well as negative feedback in cases where their self-care practices were discussed.

Several participants expressed a lack of concern if the doctor spoke detrimentally about their use of self-care. Some of these participants felt the advice they received on self-care was coloured by other factors which were again influenced by highly negative perceptions of health care providers in the local context. For example, one participant in Chakaria stated;

> *"…the doctors won't share their knowledge. If they do this they can't earn money. Doctors think that if you learn something then we won't visit them, most of them think like this"* (Interview 35)

The sentiments of the above quote were shared by a number of other participants from both Chakaria and Domar. As mentioned previously, the health message regarding particular types of self-care appear to be getting lost within the negative perceptions patients carry in regards to their health practitioners and local health system. Any attempts made to encourage people against certain inappropriate self-care may be lost as a result of the dominant ideology amongst lay persons that doctors feel the need to encourage patients to attend their consultation chambers in order to maintain an income. However, these experiences and perceptions do not appear to prevent future self-care adoption. Similarly most participants did not change their self-care practises as a result of negative interactions with qualified doctors. Although some acknowledged provision of more information could be a key component in their ability to protect against future episodes of illness and the efficacy of their health seeking behaviour in response to ill health. This point was expressed by two females in Chakaria who felt that this type of instruction was lacking from their consultations with the doctors they had previously visited;

"If the doctor instructs us about the dos and don'ts about health it would be helpful. I want them to help me in this regard….I want to learn from more knowledgeable people because an illiterate person can't teach me in a proper way" (Interview40)

"Which medicines should we take? How can we get proper treatment on time from the doctor? As we are uneducated, if we would be more educated about our health it would keep us better in a greater way. Sometimes we don't get good behaviour from the doctor. If we discuss more about our health problems they yell at us and make us stop." (FGD 12)

The opportunity to promote and provide education on appropriate measures towards disease prevention and health maintenance through self-care outlined in the previous chapter is being missed. The range of benefits and advantages provided by the adoption of self-care in response to ill health and infectious disease, as previously outlined, will remain hugely influential in peoples' decision to adopt various forms of self-treatment. If these practises are to continue to be adopted it is essential that they remain in the best interest of the sick individual. Conceivably one of the best ways to ensure appropriate self-care adoption is through the doctor patient consultation period. Perhaps the most detrimental impact of negative interactions between doctors and patients is the missed opportunity to provide this platform of information to ensure that better self-care is utilised. Indeed, in some cases, providing positive reinforcement for any correct steps taken by individuals adopting self-care as a disease prevention or disease management strategy may also be missed.

This latter point is reinforced by some of the more positive exchanges recounted by several participants regarding their self-care interactions with doctors. The following quote from one male in Chakaria demonstrates the value positive information, provided by health professionals, can have in supporting safe and effective self-care;

"You know I had this problem with diarrhoea. I would get it every morning and sometimes through the night almost every day. The doctor at the hospital said I needed some treatment and medicines but the cost was too much for me so I came back because it was a lot of money. In the past before going to the doctor I used to drink coconut water and juice from the malaria leaf so I continued to take this again and after one day it started working and my diarrhoea problem was reduced and then it stopped. I was very happy about this and I told my neighbours and even I told my doctor again….they were very happy for me and told me that I should drink the same things again if I again suffer from diarrhoea like this. They even said thank you and praised me. They said well okay if you think it is working and you feel okay then you should keep using it" (FGD 11)

However, for those individuals adopting self-care without any engagement with health professionals other obstacles and constraints can determine the likely use of self-care.

6.10.2 Lack of Natural Resources

Natural resource availability has been previously documented as an influential component in people's use of self-care in rural Bangladesh. When access to components of herbal remedies is within the immediate proximity of the patient and is without either direct costs or low indirect costs, it can become a strong influence in selecting self-care as a treatment response (Edgeworth & Collins, 2006). Although natural resource availability is unlikely to operate in isolation as other aspects of human, social and financial capital can also play key functions in the self-care adoption process, lack of access to natural resources is a primary obstacle for participants' use of natural self-care. This is evident from the questionnaire findings in which 73.4 percent of respondents stated that access to natural materials was a requirement for them to be able to adopt self-care strategies in response to illness. This was a higher percentage than most other options including 'money' (68.2%) and 'support from kinship' (31.3%). Only 'knowledge of treatment' received a higher positive response (93.1%). Examples from numerous interviews and focus groups support the prominent role natural resources and ingredients play in the implementation of self-care strategies. As highlighted previously in Chapter 5 participants readily identified a range of natural methods used to treat a variety of minor illnesses and diarrhoeal diseases such as dysentery which did not involve the purchase of any medicines. When access to this self-care resource is circumscribed it can have a detrimental effect on the adoption of self-care. This issue was expressed by a number of participants through interviews and FGDs conducted in Chakaria and Domar, who stated that a decline in natural resource availability had made it more difficult to prepare herbal remedies;

> *"There is a lack of availability of natural resources, of the types of leaves and materials that you need to be able to use traditional methods……the leaves you need to treat diarrhoea, and for some other types of traditional practices, are not available, you can't get access to them. If I could get access to them then I would use them as I think they can successfully treat diarrhoea."* (Interview 1)

Growth in population density, increased use of available land through agricultural practises and changes to the types of farming practised, such as use of fertiliser, was frequently expressed as reasons for the decline in natural resource availability. Many participants in both Chakaria and Domar believed that these developments were not only detrimental for current self-care strategies but would have further negative consequences for future generations as availability will continue to decline. This would lead to more people using alternative treatment measures and result in the demise of self-care practises, particularly those using natural products prepared in the home.

It is clear from the research findings that a decreasing amount of natural resource availability is detrimentally affecting people's current use of self-care. Increases in population density, modernisation of agricultural practises and to some extent a reduction in traditional knowledge has created difficulties in accessing natural resources in some areas of rural Bangladesh. Although a number of participants in Chakaria are able to demonstrate degrees of adaptation by sourcing natural ingredients from alternative locations this negates some of the widely reported positive aspects of using self-care such as saving time and opportunity costs.

6.10.3 Impact of Floods and Availability of Natural Resources

Another environmental hazard also played a key role in restricting and reducing access to natural self-care resources in Chakaria District. Inhabitants of the low land area in which part of Muhuripara is situated are vulnerable to seasonal flooding from the Local River and flash floods from heavy rainfall at certain points in the year. The impact of flooding was captured by a recent survey conducted in the region in which floods were ranked as the most important disaster (94.4%) people faced (Ray-Bennett et al, 2010). Exploring this particular disaster context from the perspective of self-care adoption yielded several discussions concerning the restrictive impact of the floods not only on people's ability to access health care but also their ability to use certain types of self-care. In particular, flooding detrimentally affected the use of traditional remedies by obstructing the use of natural resources that would normally have been utilised. This issue was addressed by one participant while discussing their own attempts to grow plants used in certain herbal remedies they used to treat minor illnesses;

> *"Yes I did this (planting in the home), but in the rainy season the water levels are high, they come up to here (demonstrates to waist height while standing) and so the plants died."* (Interview 12)

Discussions with other participants identified similar issues concerning the damage flooding imparted on local vegetation, particularly those used for medicinal purposes. A number of participants felt that the frequency and duration of seasonal flooding had increased over recent years which posed severe obstacles to the future use of self-care methods involving natural and traditional methods. People in Chakaria believed any attempts to try and establish their own natural resource base in the household for medicinal plants was futile due to the extent of environmental hazards in the area. Others felt the continuation of flooding frequency would make it impossible for future generations to use natural resources in treating health problems. Thus self-care, in their eyes, would become a treatment response consigned to the history books;

> *"These methods (traditional remedies) won't be available. Because of the floods these types of plants die. If we have a papaya tree over there it will die when the floods come. There is nothing to be done we cannot plant here because of this so eventually it will be less and less and the next generation they will not know these methods and they will not practice it."* (Interview 25)

However, in the current context participants demonstrated resilience and adaptations in response to the declining availability of natural ingredients and in response to reduced availability during times of flooding. This was particularly evident in Chakaria where several people described investing extra time and effort into their traditional remedy preparations by seeking ingredients from the 'hilly area'. This is an area of the district located approximately twenty to thirty minutes away on foot from the research village of Muhuripara. Population density and land development is restricted in this location as it is both difficult to build on and to use for agriculture. As a result plant life remains relatively undisturbed and thus provides a wealth of differing natural products that people use in various herbal remedies. The drawbacks for some participants' were related to distance, opportunity costs and the additional time burdens this placed on self-care preparations, as highlighted by one participant;

> *"It can take some time to collect the ingredients that you need. If the patient is here then we will go and collect and come back and prepare it. Earlier we could find what we needed, but now it is not so available here (in the village). So it can take 10 or 20 minutes depending on what we need."* (FGD 12)

Adaptive strategies in relation to lack of natural resources were not as palpable in Domar, despite strong sentiments in regards to a declining resource base through changes to agricultural practices. This may be because the area is not affected by flooding and flash floods to the same extent as those found in Chakaria. As mentioned earlier in Chapter 3, drought and food security pose the greatest threats to households. Therefore, the need to find alternative sources of natural products used in traditional self-care is not required to the degree described by participants in Chakaria. Participants in Domar replicated some of the sentiments of people in Chakaria when discussing loss of traditional knowledge which is occurring in the opinion of a small number of participants.

6.11 Concluding Remarks

This chapter explored the influences on self-care adoption in three areas of rural Bangladesh. Exploration included the role gender, age, socioeconomic status & cost-effectiveness, education and literacy and location have upon the adoption and utilisation of self-care practises. The findings indicate that factors such as age can play a role in the type of self-care practised by the sick individual or the care provider. Gender is at times influential in the degree of autonomy of choice surrounding the use of self-care as certain societal practices can restrict women's ability to access other types of care of their choosing at certain times in the day. The ability to pay for health care was also found to be influential in the decision to adopt self-care, as those without sufficient purchasing capacity resorted to the cost beneficial approach of self-treatment.

The role of qualified medical professionals has emerged as an area in which people's self-care was constrained. This primarily resulted from a communication breakdown between many doctors and patients as well as the strong disapproval of self-care practises from the biomedical sector. The division that currently exists between doctors and patients restricts many individuals from acquiring better self-care skills and reduces their levels of empowerment and agency in utilising self-care at appropriate times for appropriate levels of illness.

Finally, some key obstacles to self-care use have also been identified. This includes a dwindling natural resource base, which at times can make it more difficult for households to utilise the range of natural products used in many different medicines

prepared within the home. The hazardous flood environment in which many participants lived was also seen to be a restrictive influence on self-care adoption at certain times of the year. Floods and flash flooding often destroy the natural material used in many home-based treatments. Therefore during the heightened flood and post-flood disease risk environment many households ability to respond through self-care is circumscribed.

Having discussed the main empirical findings from the fieldwork in Chapters 5 and 6, the following chapter discusses these findings in relation to theoretical perspectives and literature concerning self-care that were raised earlier in this thesis. Chapter 7 considers the broader questions self-care behaviour raises in relation to effective disease management and the implications this has for both the patients and the wider healthcare system before leading into the concluding chapter of the thesis.

DISCUSSION

CHAPTER 7: DISEASE MANAGEMENT THROUGH SELF-CARE: IMPLICATIONS AND OUTCOMES

"The desire to take medicine is perhaps the greatest feature which distinguishes man from animals"
(Osler quoted in Fabricant & Hirschhorn, 1987, p. 204)

7.1 Introduction

This thesis critically examines the adoption of self-care for health in rural Bangladesh, refining the debate surrounding safe and appropriate self-care and its implications for disease management. In order to meet these aims three research objectives are addressed within the study as follows:

- To examine the adoption of self-care as a disease management strategy in the event of illness, with specific reference to diarrhoeal disease
- To identify what is indicative of appropriate and inappropriate forms of self-care adopted in the event of illness, with specific reference to diarrhoeal disease
- To determine what lessons can be drawn from the adoption of self-care as a disease risk management approach and how these can be more widely applied to community based infectious disease risk reduction and policy

The previous two chapters have documented the widespread use of self-care and the range of differing methods people in rural Bangladesh employed to respond to a variety of illnesses. These have included traditional, herbal and modern pharmaceutical health behaviours and provided lay and qualified health professional opinions about the meaning and practice of self-care. Although there are some disparities and conflicting attitudes regarding the self-management of various common illnesses, some practices are deemed an adequate measure that would not detrimentally affect the individual or increase disease severity. Determinants of self-care adoption have also been explored highlighting the uniformed use of self-care across differing age, gender, socioeconomic and educational variables. However, their influence can become more complex in some circumstances, particularly gender and age. Further cultural and environmental factors have been documented as obstacles to self-care alongside the expert – lay person interface within professional health care.

This chapter discusses these empirically based findings in addition to the broader questions and considerations they raise in relation to self-care in rural Bangladesh previously identified in Chapters 2 and 3. The discussion is guided by the principles that can be elucidated from the adoption of self-care as a disease management approach. More specifically, the chapter addresses the implications of self-care for the lay user, PHC and the healthcare system in Bangladesh. This includes beneficial outcomes at the household level such as economic savings on healthcare expenditure, circumnavigating restrictive cultural practices and preserving levels of dignity. Threats to self-care implementation and opportunities for self-care support that can serve to increase its prospective application in fostering resilience to disease are also discussed. A substantial aspect of this is the promotion of self-care integration into the wider healthcare system. This chapter argues that the prolific use of self-care, combined with local cultural dynamics and receptive community understanding of household responsibility for healthcare implies considerable leverage for the assimilation of self-care into wider healthcare provision. Examples of the positive impact government and NGO healthcare programmes can have upon self-care are also discussed leading to the suggestion that institutional moves towards existing self-care behaviours could be beneficial for both patients and the healthcare system itself. Synergies between self-care and PHC add currency to these ideas. However, the manner in which self-care can be scrutinised and judged rather than understood and appropriately managed by some health professionals suggests promotion of self-care within PHC philosophy is not without challenges when self-care interacts within the hegemony of biomedicine. Additionally, the benefits of self-care are not a panacea for current problems with disease risk or healthcare response. The use of inappropriate forms of self-medication indicates complications of misplaced and under supported levels of community empowerment. Brief conclusions are provided on these issues before the subsequent chapter concludes the main arguments made in this thesis detailing the wider implications of this research.

7.2 Conceptual Challenges of Self-Care

Prior to determining the lessons that can be drawn from the adoption of self-care as a disease management strategy; the conceptual challenges of self-care are addressed. These build on notions of conceptual reconstruction applicable to the developing

country context of Bangladesh as discussed within earlier chapters. As the study, utilisation and features of self-care remain in their infancy in developing countries the challenge revolves around establishing conceptual clarity for this multi-dimensional construct and how it translates to self-care practice within a resource poor environment. Establishing its philosophical foundations, explored in light of the research findings presented within this thesis, can provide new understanding of the value self-care may have for disease management.

Self-care has numerous definitions and is influenced by different social, economic and historical factors (Wilkinson & Whitehead, 2009). Definitions of self-care are fraught with problems due to the nature in which this health behaviour can become intertwined with external assistance (both qualified and unqualified). For example, Haug et al (1989) define self-care as exclusively non-professional in contrast to Hickey et al (1986) who view self-care as interactive with the health care system. Alternatively, Rogers & Hay (1998) suggest conceptualising self-care as a continuum spanning from self-care to professional care. Meanwhile, the capacity to act and make choices and a focus on aspects of health care under individual control (as opposed to social policy or legislation) has been suggested as the critical issue within self-care debates (Segall & Goldstein, 1989; Gantz, 1990). In other words, the individual exercises independent control and responsibility over his or her self-care decision making and actions.

As indicated by these divergent interpretations, the concept of self-care is unclear and in need of further clarification regarding content, meaning and replication (WHO, 2009). Such clarification is pertinent to the under-researched developing world self-care context of Bangladesh. However, differing lay perspectives of participants from Chakaria and Domar only served to reinforce the variety of labels attached to self-care. Although differing terminology was widely understood and at times used interchangeably a variety of preventative, regulatory and responsive associations were attached to the meaning of self-care. The continued divergence of self-care is grounded in philosophical notions of subjectivity and the perspective of inter-related multiple realities that complement each other. Epistemological contentions in Chapter 4 outlined how data has elements of subjectivity. With regard to this study of self-care in rural Bangladesh, the subjectivist perspective involves interpretation and generalisation of self-care through ‘thick descriptions’ (Patton, 2002) of particular events.

From both the literature review and findings presented from the fieldwork it can be argued that self-care is rarely a mutually exclusive response to health risk. Rather it is a complex and fluid process of everyday life. Self-care in rural Bangladesh is predominantly a health resource which households adopt as a means of maintaining health, preventing illness and employed in response to common acute illness conditions. It is embedded in the idea of health as a functional state (Blaxter, 2004). Some preventative health aspects were indicated in rural Bangladesh through the use of self-care terminology such as *neejer jotno* (keeping clean) and the acknowledgement of hygiene practises. However, self-care was also a response to disease and illness in line with traditional professional perspectives suggested by Dean (1981). The concept has some similarities to early understandings of self-care as lay and individualised health behaviour (Levin, 1986). However, Levin (1986) did not link this to contexts, perceptions and broader structural issues that are clearly pertinent to the Bangladesh case. Self-care in the settings of Chakaria, Domar and Matlab also has some linkages to Orem's concept of self-care agency (1991; 1995; 2001), particularly issues of power to engage in self-care through the notion of self-care agency. These ideas are predominantly grounded within nursing theory and are therefore related to compensatory care in which self-care is applied because of the individuals' inability to care for themselves. Community, kinship and wider social networks have a salient role to play in many households' self-care approaches, but these occur more through the specific influence community ties play within rural Bangladesh rather than as explicit compensatory measures due to patients' incapacity to perform self-care. The involvement of community ties aligns itself to the importance of social support in facilitating self-care; often highlighting that self-care is not an individualised practice (Dean & Kickbush, 1995; Hoy et al, 2007).

The heavy influence of social support dilutes the notion of self-care as an individualistic process and also brings into question the extent to which the user is in control of care and responsible for decision making in their self-care choices. Personal control is regarded in some quarters as an essential component to self-care understanding (Segall & Goldstein, 1989; Gantz, 1990). However, it fails to account for reduced agency and restricted accessibility to processes which may facilitate self-care adoption. Participants from the three research sites regularly cited restrictions and limitations imposed upon their ability to utilise self-care. These barriers were exemplified through the impact of reduced natural resource availability, flooding in Chakaria and Matlab, and in some

cases negative interactions with healthcare professionals. Some aspects of gender stratification were also identified through women's restricted movement which may force the uptake of self-care as external healthcare provision is beyond their reach. Although the majority of self-care practices occurred through choice rather than enforced adoption, it is clear from the findings that self-care as the freedom to adopt and take responsibility for self-care utilisation is too simplistic for the case of rural Bangladesh. Broader cultural, socioeconomic and gender issues can have an influence on the extent of autonomy in a manner not yet documented within assessments of the conceptual nature of self-care, particularly in developing country contexts.

Appraisals of self-care stem from diverse and often conflicting ideological perspectives, which reflect the contested nature of health and treatment behaviour. Levin (1977) suggested a holistic approach in which self-care is a component of lifestyle management. Professional care is viewed as a substitute or supplement for self-care which is performed by the lay person as the primary care giver. Within the professional perspective it is suggested that health services should therefore be adaptable to support existing self-care practices. Such flexibility offers significant potential for the future role of self-care in Bangladesh. However, it is problematic due to the current inability, and in some cases desire, of the healthcare system to support self-care and the potential danger in overemphasising lay care in response to all forms of illness. Findings from this study suggest the disease endemic environment of Bangladesh creates a context where the proposed adoption of self-care can be highly inappropriate, either in the type of practice implemented or the type of illness tackled by the lay carer.

An alternative standpoint is provided through the medical perspective which proposes self-care as a substitute for medical care. This position holds resonance for the case of Bangladesh due to the range of shortfalls in health service provision as outlined earlier in Chapter 3. Self-care is required by the lay user to respond to the lack of healthcare in the rural context. However, the medical perspective assumes healthcare professionals will act as the key influence in determining the level of self-care. Continuous support from the health system is also presumed to be a patient's preferred choice with self-care deemed a second best choice in the absence of health facility support (Russell & Iljon-Foreman, 1985). Findings from this thesis indicate the highly limited role health professionals play in the self-care process and the widespread preference for self-care in comparison to many components of the healthcare system amongst the public. The

medical perspective of self-care is therefore clearly not applicable to the Bangladesh context based on the outcomes of this study.

The social or interactive approach proposed by Barofsky (1978) perhaps holds greatest relevance to the adoption of self-care in Chakaria, Domar and Matlab. Self-care is viewed as behaviour that is developed through a social process which also includes proficient utilisation of health care professionals when self-care measures are deemed unsuitable. A considerable degree of participants expressed their self-care behaviours in accordance with this approach in which self-care is utilised as the primary treatment measure followed by healthcare consultation where necessary. Where this approach lacks applicability to the Bangladesh case is in the nature of healthcare consultations, for which the social approach includes patient assertiveness within professional interaction. Social hierarchies, socioeconomic stratification, and doctor – patient gender differences all appear to play a role in weakening patient confidence. Health professionals' negative understanding of self-care adoption may also undermine any attempts by patients to instil assertiveness into self-care interactions.

Findings from this thesis suggest self-care in rural Bangladesh comprises a specific ability to respond to health issues which is influenced by a range of broader factors. In contrast to many other recorded evaluations of self-care, it does not appear to be widely deployed as a means to prevent or mitigate illness. Responsive self-care was the dominant form. A social perspective may currently hold greatest applicability and understanding to the self-care concept. However, a move towards a holistic approach offers considerable value in any future strategies targeting increased and appropriate types of self-care adoption for rural households.

Changes in self-care policy and practise towards more holistic interpretations of this health behaviour would be important for the rural Bangladesh context. Insights into self-care obtained through this study suggest the value, efficacy and prominence of self-care as a treatment strategy. By understanding self-care as a health resource it may be possible to tailor local interventions to rural households' needs and self-care capabilities to provide increased self-care impact. Although there are concerns surrounding the safety and appropriateness of certain self-care strategies, greater emphasis on holistic self-care will provide an avenue for increased levels of healthcare system support. By including the health system, a supportive self-care environment can be put into practice which will diminish the extent of inappropriate or inefficient self-care behaviours and

also allay current health practitioner fears regarding the unregulated nature of self-care amongst the lay community. It is therefore the contention of this study that self-care approaches widely practised at community level must be allowed to continue in a more receptive health system environment. These changes are taking place within policy and practice in some developed countries enabling greater levels of self-care to be adopted by the patient. However, similar policy directives are yet to be fully established in developing countries such as Bangladesh. It is reasonable to contend that the evidence base for these types of changes is sadly lacking in breadth and depth. It is hoped that this study can act as an initial step in breaching the lack of research on this topic and provide a platform for further research into understanding how and why self-care is exercised by the impoverished in Bangladesh and other resource poor countries throughout the developing world. The many facets of self-care, the implications upon the lay user and the healthcare system and its synergies with PHC are discussed in detail in the following sections of this chapter.

7.3 Implications for the Lay User

The predominance of self-care in response to illness is recorded to a limited extent within some developing countries (Leyva-Flores et al, 2001; Bhatia & Cleland, 2001; Pagan et al, 2006) including Bangladesh (Ahmed et al, 2003, Cockcroft et al, 2004; Ahmed 2005). Within this previous research a primarily quantitative agenda had failed to identify the reasons that underscore why self-care is regularly drawn upon in response to ill health. One facet of understanding the processes in self-care adoption is examination of self-care from the community's perspective which helps identify the impact forms of self-treatment have upon the lay user. Hardon et al (1994) reinforce this point by identifying the relative lack of studies that have examined self-care from the individual's perspective in order to explore their criteria for self-care selection. In doing so it is also important to revisit earlier indications of benefits and detrimental impacts from self-care adoption and thus question the circumstances in which self-treatment will be beneficial for the health and livelihood of the user.

7.3.1 Preservation of Dignity

Analysis of the benefits self-care offered the rural household indicated some culturally

context specific implications, particularly in relation to the preservation of dignity. This is viewed as central to theoretical constructs of empowerment and poverty alleviation as it represents an important goal for impoverished households marginalised by society (Ahmed, 2008). Maintaining dignity is therefore an important component in poor people's daily realities. Measures that are able to assist in this process are thus valued at the household level. The use of self-care methods which allow the patients to treat themselves within the 'security' of their own home and/or without the need to seek external treatment from various health practitioners can help preserve feelings of dignity. Similarly individuals who are able to use their own knowledge in the production and administration of herbal and home-based remedies are also likely to harbour notions of empowerment and dignity. The process of treating themselves rather than relying on external assistance is captured by the interviews below:

"I feel good doing self-care it gives me good results… I think I am taking responsibility for my health. I am taking care of myself and I feel good about that" (Interview 35)

"I want myself to be as self-reliant and keeping a healthy life" (Interview 45)

Ignorance was often proposed by health practitioners, policy makers and in some cases community members, as an underlying reason for the extent of self-care adoption. There was awareness of this label amongst many participants and successful utilisation of self-care in response to cases of ill health may also enhance feelings towards dignity and empowerment in the light of accusations of ignorance. Overall, these influences were reflected in the survey findings as preservation of dignity was identified by 36.7 percent of participants as a benefit of self-care.

Additionally, the strong influence of Islamic practices and laws throughout the country dictate a highly conservative approach to many aspects of life, including illness and health seeking behaviour (Zaman, 2005). There is also an influence through gender as notions of modesty and shame surrounding body image are instilled amongst females at a young age and reinforced through adolescence to adhere to designs of 'honour' (Caldwell et al, 1998). Within this context girls learn that life beyond their household and immediate kinship is an unsafe environment for 'honourable women'. Any deviation from these norms places the individual and her household at risk of bringing shame upon the family and detrimentally affecting future marriage possibilities (Rashid,

1997). Treatment seeking through consultation with health practitioners, particularly those of patient – practitioner gender differences, may represent a difficulty in managing the cultural norms surrounding female interactions in society beyond the household. The adoption of self-care may therefore be perceived as advantageous through its ability to preserve levels of dignity as it offers a means for treatment to occur within the 'safer' constructs of the household. These ideas also resonate with the implications this has upon women and female empowerment within the patriarchal constructs of rural Bangladeshi society. This is discussed at greater length after the economic impacts of self-care adoption are assessed below.

7.3.2 Economic Impacts

Detailed examination of the underlying factors behind the adoption of self-care frequently emphasised the pivotal role of household economics. One general difference between adopting self-care rather than engagement with medical services resides with cost. Utilisation of health services, particularly formal and qualified health providers, is often higher among well resourced households with greater levels of financial capital availability (Russell, 1996). This is reinforced by higher percentages of poorer households experiencing difficulties in paying the costs of healthcare and therefore experiencing greater levels of exclusion from the health network (Wilkes et al, 1997). With the majority of the Bangladesh population living below the poverty threshold (BBS, 2007) the economic cost of healthcare utilisation can be devastating (Hulme, 2003). Recent research conducted in southern Bangladesh recorded expenditure for treatment of common illnesses to be vastly in excess of the average daily household income. This included the cost of responding to fever, diarrhoea and skin infections which were five, six and eight times, respectively, the average daily wage (Wahed & Mahmood, 2009). Similar findings were obtained from this research as many participants expressed difficulties in paying for health services.

However, in stark contrast to the levels of expenditure required to engage with the healthcare system, the adoption of self-care emerged as a cost-effective means of responding to a range of common illnesses. Self-care offers a means to administer treatment at either no cost or at a very low cost through some forms of self-medication, the purchase of ingredients for home remedies or the purchase of ORS. The potential and actual savings experienced by many households was a clear determinant in the

decision to adopt self-care. In several cases participants described successful treatment outcomes through these methods. Households benefited through self-care utilisation in terms of reduced financial expenditure and reduced opportunity costs as time spent away from the home for consultation with health practitioners was rarely required. Some examples of illness scenarios requiring hospitalisation and incurring substantial financial costs were documented. However, the majority of participants took into account perceptions of illness severity and where they believed self-care would be successful it was adopted on the basis of overall cost-effectiveness. Recurrent illnesses such as fever, colds and diarrhoeal disease were often effectively dealt with in this manner due to prior experience in responding through self-care methods. The use of self-care in these contexts therefore enabled households to manage the impact of ill health without incurring significant financial outputs, reduced the potential loss of earnings and facilitated coping with ongoing disease risks.

Many participants implied varying degrees of exclusion from the healthcare system based on ability to pay. However, entire health development strategies (for example World Bank, 1993) have been based on the implementation of user fees and the concept that poor households will always pay for services. Extremely low health service utilisation rates across the developing world and Bangladesh have been implicated in the assertion that user fees for health services is preventing improvements in the health status of the majority of poor people (Waitzkin, 2000; Farmer, 2003). While these health economic policies remain in place it is highly likely that self-care will continue to be used by households as a means of mitigating or avoiding the detrimental burden payment that healthcare can enact. Self-care remains a highly useful coping strategy in such a context and will continue to add to the unresolved policy debate surrounding willingness and ability to pay for healthcare.

7.3.3 Negotiation of Gender Dimensions through Self-Care

There is a substantial shortage of research examining the influence and interactions of gender upon self-care adoption within developing country contexts. This research attempts to address the imbalance by providing a greater focus on the potential implications of gender upon self-care adoption. Interviews and discussions with female participants in Chakaria and Domar revealed some of the constraints attached to seeking external care due to the lack of a male chaperone, experiences which reflected

cultural and gender divisions deeply embedded in rural Bangladeshi society. This often increased the likelihood of self-care adoption and indicates self-treatments within the home offer potential to those women who are unable, or feel unable, to engage with external forms of healthcare. Social pressures and attitudes prevalent within the rural context have also been reported to discourage women from seeking consultation from male doctors, particularly in relation to female specific health issues (Huq & Khan, 1991; Rashid & Micaud, 2000). Preference for female doctors was found to a small degree in this study for similar female health issues (primarily problems related to menstruation). Although this was not the case for diarrhoeal disease, perhaps because of the widespread incidence within the community, women adopted self-care significantly more than consulting a qualified doctor in response to this particular illness. Higher levels of self-care in this context may be a reflection of the cultural factors and social pressures introduced in Chapter 3.

For those women who utilised self-care, whether through choice or due to restricted mobility, a psychosocial importance has also been suggested for female adoption of this health behaviour (Rashid, 2007). In contrast to the predominant household dynamics in rural Bangladesh, where many women are forced to ration and share food and resources with other family members (Nettleton, 2006), self-care is often a solitary action. Types of self-care either made within the home or purchased from pharmacies invariably do not need to be shared and therefore women can often administer treatment without associations of guilt (Rashid, 2007). Taking sole responsibility to prepare and consume forms of self-care may also become an empowering process that bears similarities to the maintenance of dignity as previously discussed and highlighted by the interview quote below from a female in Domar;

"I'm treating myself and I feel good about that because if I can get a cure myself it's better for me." (Interview 27)

This may be a salient issue for many women as it provides the potential to circumnavigate the gender hierarchies that are often imposed within the rural Bangladesh context during treatment seeking, as mentioned above and in Chapter 6.

Although self-care is often a solitary action when it comes to administration of treatment, women's decision making in regards to self-care was often influenced by advice and behaviour of other households and community members. Both male and

female relatives, as well as neighbours and mothers-in-law, were often seen to play a role in decision making, as documented in the previous chapter (section 6.9) and several other forums focussing on Bangladesh (Ahmed et al, 2000; Zaman, 2005; Biswas et al, 2006). In the case of self-care, the primary caregiver role ascribed to mothers within the rural household was also an important factor in the treatment selection process. Some women were able to utilise their position to facilitate the adoption of self-care. However, these cases often reinforced the traditional gender roles as women adopted these measures to care for their husbands;

"*I encourage my family to use the self-care. My husband was wondering whether he would have to take the injection saline at hospital but I said to him 'no you don't have to worry about that; I can take care of you*" (Interview 27).

This narrative in relation to diarrhoeal disease highlights the increased workload subsequently placed upon the woman in order to respond to her husband's illness, and mitigate the severity of the problem. Although the decision to adopt self-care in this case has cost benefits for the household when compared to hospital care, it increases women's work load, responsibilities and reinforces traditional household dynamics.

Women's role as the primary care provider within the household also increased exposure to self-care undertaken on behalf of infants and children in the family. Although sickness in children, particularly boys, appears to hold a higher status warranting professional treatment, self-care is also believed to be at its most effective in treating illnesses in children. Self-care actions amongst this demographic are invariably conducted by the mother and in some cases the grandmother. Therefore traditional care dynamics can lead to increased self-care actions amongst women.

However, the implications of self-care upon gender were not homogenous. Contrary to the expectations listed in some of the health seeking behaviour literature (Hausmann-Muela et al, 2003; Shaikh & Hatcher, 2004; Ay et al, 2009), significant gender differences were not found in the adoption of self-care within Chakaria, Domar or Matlab. It has been previously suggested that "the illness experience (discomfort and perceived severity) exerts greater influence on illness behaviour than sex differences" (Dean, 1989, p. 150). An important finding from this study was the active role many men played in treating illnesses through self-care. This was indicated in Chapter 6 through male self-care utilisation during livelihood practises. To this extent several men

were stepping into the traditionally female sphere of provision of care. In Ahmed's (2008) discussion on 'Islam, masculinity and poverty alleviation', high minded (*udaar*) masculinity is identified. This is characterised by greater equality within the husband – wife relationship and includes notions of being a good husband and father. It is perhaps these individuals who exhibited greater levels of self-care engagement, particularly through the provision of care for their family which can take place during self-care adoption. Additionally, the role of NGOs operating in the three research sites cannot be underestimated in terms of health education for both men and women. This was demonstrated by high levels of knowledge amongst male and female participants regarding forms of home based treatment for diarrhoeal disease such as ORS and *chaler bori*. Identification of these measures supports arguments from Ahmed et al (2003) concerning community's empowerment as a means through which self-care is undertaken and increasing. Findings from this study appear to reinforce the value of self-care adoption through widespread diffusion of preventative and basic curative health messages by NGO and GOB health personnel. These health education messages serve to increase not just the households' capacity to recognise, diagnose and undertake appropriate forms of treatment in response to certain common minor illnesses; but may also assist in reducing the gender stratification of care for household members, a vital component in PHC, by encouraging male engagement of self-care.

Continuation of the empowerment thesis and reduced gender stratification was also documented in some other cases where men and women worked together in the self-care process. This is highlighted in the example below;

"It's a kind of sharing; I know something and he knows something. I might say which medicines we need and then he will go to the shop to buy them. If it's not available in the home then I ask him to buy it. Isn't this helping each other?"(Interview 27, female)

The decision to implement self-care, through self-medication in the example above, becomes a joint effort as opposed to the traditional division of responsibilities for healthcare normally held by the female. Although the manner in which the self-care is undertaken resorts to traditional gender roles, e.g. mobility restrictions on women resulting in the male leaving the household to purchase required medicines. The overall self-care process within the research sites is a shared responsibility which takes place in a society where gender divisions of everyday tasks within the household are common place and far reaching. Self-care is perhaps one of the few tasks undertaken by the rural

household that reduces this gender division. However, further research is required to ascertain the circumstances in which greater male participation in self-care or shared self-care actions take place.

7.3.4 Coping with Environmental Hazards

The extent of annual flooding, river bank erosion, cyclones, droughts and endemic disease have resulted in Bangladesh being labelled as the world's most disaster at-risk country (ISDR, 2002; DfID, 2006). These events affect vast numbers of the population, particularly the poorest members of society, and have a detrimental impact upon national sustainable economic development (World Bank, 2004). It is also estimated that illness-related expenditures and income loss due to disease caused by disasters are the most detrimental to rural households (GOB, 2003). These issues were evident in each of the three research sites accessed in this study as drought is a common feature for households living in Domar, while flooding was a particular problem in both Chakaria and Matlab. Severe flooding in Bangladesh can have substantial impacts on people's health. Drowning and injury from water-borne debris pose immediate risks, whilst contaminated water accentuates the longer term risk of diarrhoeal disease, skin infections and respiratory disease (Few et al, 2004). Stunted growth has also been reported due to interruptions in the access to food through crop damage (Buttenheim, 2006). Access to health facilities often becomes restricted either due to infrastructural damage, restrictions on travel routes and/or damaged roads (Beck, 2005), which presents potential scope for an increased likelihood of self-care use.

In the current policy environment of community participation and empowerment in mitigating health disasters, the balance between self-treatment and governmental and other institutional responsibility to provide support is yet to be calculated. This requires knowing how self-care is interpreted and utilised in terms of disaster vulnerability and response. Findings from this study indicate the potential value of self-care practices for some households during times of disasters such as flooding. The use of herbal remedies or treatments produced within the home offered an immediate method of response which circumnavigated potential difficulties in accessing external healthcare providers and facilities. Adopting self-care measures during the onset of natural hazards can therefore offer an effective response strategy.

However, this practice was not widespread amongst the disaster affected population as the impact of flooding appeared to be more detrimental in efforts of self-care adoption rather than leading towards greater levels of self-care engagement and better disease management during the time of crisis. This may be because self-care appears to be adopted primarily as a response strategy rather than a mitigation approach and can therefore be affected by the onset of the natural hazard. The use of self-care as a coping strategy draws some parallels with other coping mechanisms that have been ineffective or counter-productive in response to flooding. Lack of fuel, resources and displacement often meant people could not boil water for purification following the 1991 Bangladesh cyclone (Hoque et al, 1993). Also, women drank less water and consumed less food to reduce the need to use sanitation facilities which were often inaccessible following the flooding in Bangladesh in 1998 (Ahmed et al, 1999). Similarly, findings from this study indicate flooding was an obstructive factor in the use of natural products used in herbal remedies by a large number of participants. Flood waters either destroyed plant life or restricted mobility in accessing required natural materials.

As stated within Chapter 1, interest in resilience and human coping within disasters, including epidemic and endemic disease environments, has gained prominence with the emergence of the current disaster risk reduction paradigm and the Hyogo Framework for Action (HFA). The key mechanisms in disaster reduction outlined within these initiatives have clear resonance with the application of self-care in the rural Bangladesh context. This study suggests there is evidence that self-care could fulfil aspects of disaster risk reduction and facilitation of resilience building through its use of natural resources, linkages to empowerment and the locally driven nature of self-care adoption. Indeed some institutions believe "local coping mechanisms must form the basis of international development support" (Tearfund, 2005 p. 15; DFID 2005; IFRC 2009) in disaster management. Within this context, self-care could be an important component in building or enhancing resilience to disease within disaster vulnerable environments. However, utilisation of self-care may become a more complex issue as flooding was an obstructive factor as previously mentioned. Adaptation and resilience was demonstrated by several households who sought herbal remedies from locations less affected by the onset of environmental hazards. It was clear that flooding has a restrictive implication for this type of self-care adoption, particularly in Chakaria. By laying bare the scenarios in which self-care efficacy and adoption can become diminished within the disaster risk

and hazard environment, it may be possible to move forward in a manner which contributes to supporting self-care within disaster and development policy and practice.

7.3.5 Implications for Diarrhoeal Disease Management

The pattern of self-care selection that emerges from this study indicates the extensive range of methods used to treat a sick individual in rural Bangladesh. This diversity is also applied to the adoption of self-care for diarrhoea and dysentery. There have been diverse efforts to mitigate the impact of diarrhoeal diseases throughout the developing world which have yet to produce significant reductions in morbidity rates. Various initiatives including vaccines, case management, education and hygiene promotion campaigns have been at the forefront of efforts to tackle the burden of diarrhoeal disease. The adoption of self-care identified within this study has many synergies with case management strategies, particularly the use of ORS. However, similarities were also identified in the struggle to sustain high levels of ORS use which has presented a challenge for development agencies and governments in many parts of the world (Daniels, 1999). Despite a reasonably widespread knowledge on ORS to treat diarrhoeal disease the regularity of ORS consumption was not always frequent enough to achieve the designed benefits. This was the primary reason for biomedical professionals' reluctance to fully support the patterns of ORS use identified in the research sites for this study. However, participants regularly recounted stories of success through these methods or seeking alternative care if ORS was unsuccessful. Importantly, detrimental health outcomes were not recorded at any point indicating that only additional costs are incurred if ORS measures are not adequate. These findings also suggest that the platform of knowledge concerning ORS consumption perhaps requires refreshing to ensure levels of self-care through this particular method are enhanced for the case of diarrhoeal disease. Current NGO and CHW networks are well placed to deliver these messages as discussed later in section 7.6.2.

In a similar fashion many of the herbal remedies adopted to treat diarrhoeal disease lacked professional biomedical support but were often regarded as highly successful forms of treatment by the participants who utilised self-care. Home based methods such as *chaler bori* and banana curries offer potential as case management strategies in alleviating the severity of diarrhoeal disease symptoms as well as the potential for effective treatment strategies. There is evidence to suggest the efficacy of these two methods (Roy et al, 1994; Faisant et al, 1995; Rabbani et al, 2001), which also have

some support within the biomedical sphere and present an alternative and supplementary self-care approach to the use of ORS. Implementation of these foods also mirrors the hot/cold humoral theories[46] regarding the cultural construction and treatment of diarrhoeal disease (Anderson, 1987). The benefits, along with the negative implications associated with the most commonly identified self-care practices are outlined in Table 7.1 below.

Table 7.1 Positive and Negative Implications of Self-Care in Diarrhoeal Disease Management

Self-Care Practice	Positive Implications	Negative Implications
ORS	Cost-effective, accessible, highly effective for symptom alleviation	Slower response, doesn't guarantee cure
Chaler Bori	Cost-effective, accessible, empowerment through use of local knowledge	Slower response, doesn't guarantee cure
Flagyl	Cost-effective, accessible	Antibiotic Resistance
Cotrim	Rapid symptom alleviation	Cost, Antibiotic Resistance
Thankumi pata	Cost-effective, accessible, empowerment through use of local knowledge	Depletion of natural resources, slow symptom alleviation
Bicchii kola	Cost-effective, accessible, empowerment through use of local knowledge	Slower response, doesn't guarantee cure
Kacha kola	Cost-effective, accessible, empowerment through use of local knowledge	Slower response, doesn't guarantee cure
Deber pani	Cost-effective, accessible, empowerment through use of local knowledge	Slower response, doesn't guarantee cure

Perhaps the greatest implication of self-care adoption is the facilitation of household coping in response to diarrhoeal disease. The regressive nature of healthcare expenditure has already been discussed. The potentially serious impact this can have upon poor households has been demonstrated through studies that document the

[46] This is the classification of foods according to a conceptual scheme based on the qualities of hot and cold foods. Treatment is only perceived to be effective if the medication and/or foods are opposite to the perceived temperature quality of the patient's disorder. Common examples are the provision of cold foods for heatstroke or fever, and hot foods for hypothermia (Anderson, 1987).

decision to avoid treatment and stop healthcare consumption because of economic and opportunity costs (Hulme, 2003). The consequences of such actions can potentially be highly detrimental to the health of the patient. However, the frequent implementation of self-care in response to diarrhoeal disease by households in Chakaria, Domar and Matlab acts as a method to obtain some form of healthcare by diluting the economic impact of the illness, without avoiding all treatment options. All the common diarrhoeal disease self-care measures are low cost, invoke low opportunity costs and, as the methods are invariably successful; it ensures household assets are not drawn upon. It is therefore clear why so many individuals adopt self-care in response to diarrhoeal disease.

The success and efficacy of many self-care measures also holds importance in terms of addressing economic factors that can result from prolonged illness duration leading to the self-reinforcing poverty – illness cycle discussed in Chapter 1. Critiques of self-care highlight inefficiency in treatment provision often resulting in treatment failure, thus protracting the convalescence period and detrimentally affecting patient recovery and a return to livelihood practises. However, few cases were recorded which reflected such a scenario. Even in the event of unsuccessful self-care, lengthy delays in further treatment seeking or negative consequences for the patient's health were not apparent within this study. A lack of negative outcomes further reinforces the position of self-care as a disease management strategy when it is combined with the positive outcomes referred to above. It also provides an indication as to why many participants are prepared to engage in self-care as it appears potential benefits outweigh the potential risks in the treatment of diarrhoeal diseases.

At the wider level, these home-based strategies also offer several benefits in terms of diarrhoeal disease management in comparison to the range of strategies currently advocated and executed by development agencies in many parts of the developing world. The self-care measures identified in this study are clearly applicable to a range of diarrhoeal diseases including diarrhoea, dysentery, giardia, rotavirus and many other variations. The ability to attend to multiple diarrhoeal diseases represents an advantage over vaccine measures which typically only address one disease at a time (Steffen et al, 2003). Vaccines in this context would be a process which is substantially more expensive and less expansive in terms of responding to the wide ranging risk of diarrhoeal diseases. Concomitantly, cost effectiveness of self-care measures is an important variable when considering the resources required to establish new or

improved water and sanitation facilities for populations at risk of diarrhoeal disease. Consideration of these issues has implications for policy makers and development practitioners focussing on disease risk management in resource poor contexts. It is therefore an issue that is discussed in the concluding chapter of this thesis (section 8.2.3) and the section below in terms of the implications self-care has for the existing healthcare system and PHC in particular within Bangladesh.

7.4 Implications for the Healthcare System

Continuity in self-care and increasing recognition of the potential role it has to play at the household level in mitigating and responding to common illnesses is likely to impact on the healthcare system operating in Bangladesh. Currently, less than 40 percent of the population has access to basic government health services (World Bank, 2003), exacerbated by a lack of required health sector investment (Ensor et al, 2002), an ongoing 'brain drain' of qualified health care professionals (Mercer et al, 2005) and the impact of unofficial and informal service fees (McIntyre et al, 2005; Rannan-Eliya & Somanathan, 2005). These barriers only serve to restrict household utilisation of health services. The solitary influence or combination of, distance, lack of finances and direct and indirect costs associated with treatment seeking through formal health providers led a number of households in the research sites to adopt self-care. It is therefore not entirely surprising that self-care remains prevalent within Chakaria, Domar and Matlab.

Findings from this research have highlighted the role health professionals could potentially play in supporting and facilitating aspects of self-care, as mentioned earlier. However, a crucial question is the extent to which self-care promotion should take place. This is clouded by legal and ethical issues relating to the transfer of responsibility upon the individual and concerns for victim blaming (Russell & Iljon-Foreman, 1985; Segall & Goldstein, 1989; Health Canada, 2004). However, these issues may hold greater denotation for developed countries where informed consent and legal assessments of malpractice is a stronger feature in the fallout from negative doctor – patient relationships. The healthcare system in Bangladesh is not pressurised by issues of judiciary appraisal to the same extent as there is little legislation relating to health professional competence (Islam, 2006). Self-care promotion is also impeded in the study sites by a mixed and at times underwhelming support from medical practitioners to facilitate increased levels of home based care. Concerns over types of self-care

adopted and the manner in which self-care is implemented were among the primary concerns expressed by health professionals. However, there was also some recognition of the potential role self-care could play if appropriately administered for certain illnesses.

In the case of diarrhoeal disease, levels of support could be further harnessed through the promotion of self-care deemed appropriate during the initial stages of treatment response. Findings from this thesis identified certain self-care practices such as taking ORS, *chaler bori* and herbal methods (*thankumi*) were not perceived to be harmful by the majority of health professionals working within Chakaria and Domar. Further research is naturally required to expand on these ideas and clarify types of self-care that health professionals will support and encourage as disease management strategies at community level. However, a key factor in facilitating this process is the nature of health service provision in rural Bangladesh. Current time constraints due to excessive demands on health practitioners detrimentally affect the ability and likelihood to support self-care amongst lay users. What emerges from this research is the need for health professionals operating in rural Bangladesh to offer more sensitivity and be more discriminating about when and how to promote self-care for each individual patient and their respective illness. The difficulties in achieving this desired position are appreciated due to the excessive demands made upon health professionals practising in many sections of the healthcare system. It is postulated that until supply side issues within the health system can be better resolved a supportive self-care relationship between lay users and health professionals may be difficult to achieve.

A critical implication is the cost of medical care. Research focused on participants' health care expenditure indicated substantial economic savings through the adoption of self-care compared to health care expenditures. The health care system could also receive considerable financial savings through reduced patient consultations and demands upon government health services if self-care practises expand in the future. It was beyond the scope of the present study to identify savings for healthcare facilities from self-care adoption. Previous studies have demonstrated considerable cost benefits for health systems (Montgomery et al, 1994; Healthwise, 2000). Given the propensity for self-care in rural Bangladesh it can be assumed that future economic benefits could be derived from promoting and integrating self-care in national health policy. Alternatively self-care programmes could offer an option in containing current costs of formal medical services. Either way, the continued importance of self-care within the

broader rubric of health seeking behaviour offers considerable importance in terms of its possible impact on the healthcare system. Further research is required to examine this possibility in the context of rural Bangladesh.

7.4.1 Integration of Self-Care into the Healthcare System

The persistent and widespread use of self-care, combined with the various potential benefits of appropriate self-care methods outlined in this study, raises the question of how it can be better integrated into the healthcare system. Some of the main issues in incorporating self-care into existing health infrastructure revolve around lack of structure, personnel and education initiatives to support self-care (Lorig & Holman, 2003). Within developed countries this situation can be exacerbated by a shift in public expectations of healthcare responsibility. This has been relinquished by the household and community, with emphasis now placed on health care providers and institutions for the prevention and management of ill health[47] (Illich, 1995). This can prove an obstacle in reasserting the value of self-care and any moves towards empowering the individual to mitigate and respond to illness issues independently.

However, the current structure and culture of the healthcare system in Bangladesh is well placed to cope with these potential restrictions in self-care integration. One of the many advantages is existing levels of self-care acceptance at household and community levels. In contrast to some of the concerns residing in developed countries is the high degree of self-care and culture of self-treatment by the individual, family and community as documented in previous chapters of this thesis. Although there have been moves towards increased engagement with biomedical professionals and wider healthcare institutions as the health care system has expanded in recent years, a strong ethos, faith and trust in many aspects of self-care remains. A high number of individuals still regard basic treatment response to be the responsibility of the individual and household, and in many cases access wider community support to achieve better self-care. Therefore a strong platform for self-care exists in rural Bangladesh which could be built upon in any moves towards integration into the national health care system.

Additionally, there is the potential contribution of community health workers (CHW) in self-care support, promotion and facilitation. As an essential component of PHC

[47] The loss of self-care capability has been referred to as structural iatrogenesis (Illich, 1995).

initiatives (Walt, 1990) an extensive CHW network is well established in rural Bangladesh through NGO and government PHC programmes. As noted in Chapter 3 the CHWs ability to "serve as a bridge between the community and the curative health providers" (Ahmed & Hossain, 2007, p. 341) could act as a key mechanism on two levels. Firstly, alleviating health practitioners concerns over unsupervised diagnosis and treatment within the household and secondly, by acting to provide self-care education, particularly in regards to self-medication. These actions could be combined with health system referrals and other aspects of public health information. Integration at this level is an achievable goal as the health worker network is already deeply ingrained in rural Bangladesh society and the healthcare system itself.

Participants rarely mentioned CHWs as playing a central role in their self-care decision making or practises, except households linked to a specific NGO health programme in Domar. Previous research has documented low levels of health worker involvement in treating illnesses such as diarrhoeal disease (Ahmed & Hossain, 2007). Results which were supported by findings from this thesis as use of CHWs were only 0.8 percent in response to ill health and zero percent for specific cases of diarrhoeal disease. Although the adoption of self-care appears to be an alternative avenue of care, particularly in relation to diarrhoeal disease, the mechanism for support and ensuring effective self-care takes place could occur through the CHW role. This is not viewed as presenting an over-reliance on CHWs as the majority of care remains performed by the individual and household. However, the CHW can position themselves as an added point of reference to support households in their self-care strategies. This could be done in a similar fashion to those key lay individuals living within the community currently accessed by households for health seeking behaviour advice and self-care support as documented in the previous chapter. The fact that these individuals, along with the NGO CHWs involved in self-care support in Domar (*Shastho Shebikas*), are both figures from the community indicates the importance of having local people in acceptance, preservation and promotion of self-care behaviours. Any future CHW initiatives in regards to self-care would be advised to engage similar individuals in the process.

Although the predominance of self-care is highly encouraging in terms of household resilience to disease there is a danger in over-emphasising or relying on household coping. In some quarters self-care is used to justify reductions in health services, as treatment response is placed upon the individual. Such practices often serve to distract from the broader social, economic and political aspects of disease vulnerability and

structural responses to addressing the causes and responses to ill health (Chapple & Roger, 1999; Redman, 2007). Any shift towards supporting individual self-care to achieve greater levels of health equity must not detract from broader efforts to provide improved health systems and reduce the inequitable access to care which currently exists in Bangladesh (Cockcroft et al, 2007). Negating responsibility to the population through a desire to decrease current stresses on the health system in Bangladesh is an issue which needs to be closely monitored to ensure the rural poor do not become further disenfranchised from healthcare provision and support.

Aside from any potential policy changes, other developments beyond healthcare may actually have future implications for the healthcare system and the manner in which self-care can be supported or even integrated into the Bangladesh health system. As previously stated in Chapter 2, in an increasingly digitalised age the advent of telemedicine offers an avenue for health care professionals to encourage certain types of self-care. Private sector programmes currently in operation throughout many parts of Bangladesh, including the field sites for this research, are beginning to offer such a system. Although this study did not find high levels of engagement with telemedicine, a number of people were aware of the service. Telemedicine is the practice of using telecommunications technology to provide medical consultation from a distance. There are concerns in some areas surrounding cost-effectiveness (Mair et al, 2000) which is likely to deter developing country governments to invest already limited resources. However, while calls for further research into cost benefits and telemedicine compliance are documented, perhaps further government integration and support for self-care could take place through increased use of private sector telemedicine programmes such as those documented within this research.

7.4.2 Self-Care as a Threat to the Healthcare System

Greater levels of self-care integration into existing healthcare provision are only possible if it is supported by policy makers and the health workforce itself. It is clear from this study that unified support has not been reached and a great deal of concern and scepticism exists by personnel working at the frontline of rural healthcare provision. A substantial proportion of health practitioner apprehension resides within a distrust of patient competence in the self-management of illness. Low levels of health knowledge and appropriate health seeking behaviour at the household were the primary

causes of concern amongst health professionals. However this barrier dissipated amongst some practitioners for certain illnesses such as fever or diarrhoeal disease. The low levels of highly detrimental health outcomes from the implementation of self-management strategies should also raise support for household disease management for many common illnesses.

However, the transfer of responsibility towards households through the promotion of self-care is not widely accepted in the health profession. As healthcare provision in both the private and public sphere is reliant on the economic purchase of services and medications, any designs to empower individuals through self-treatment may be perceived as detrimental to the financial management and profit margins of healthcare outlets. This was a view carried by several participants who believed health practitioners' failure to encourage self-care strategies was motivated by the need to maintain a strong paying client portfolio. The expanding pharmaceutical industry in Bangladesh may also perceive moves towards patient empowerment as disadvantageous to their commercial market. However, if self-medication practices continue to increase through the current unregulated health market then self-care may be used as a beneficial method to increasing the sale of medications throughout the rural areas.

7.4.3 Implications for Primary Health Care

Continued levels of household coping and resilience in responding to disease are demonstrated by the equitable use of self-care. This is best exemplified through the moderate socioeconomic, gender and age dimensions attributed to self-care adoption. Within the Bangladesh context no significant difference ($p > 0.05$) was ascribed to these variables influence on self-care. The wide use of self-care across differing sections of the rural research villages suggests a strong base for community participation and implies a degree of equity as all members of society are able to manage common illnesses. Local level resilience to ill health through the implementation of self-care strategies thus offers a means to attain good health for vulnerable groups such as the elderly and women, who are often restricted in their access to support from the health system (HelpAge International, 2000; Shaikh & Hatcher, 2004).

Self-care therefore holds resonance with the ideals of PHC and could potentially act as a key mechanism in ensuring this approach leads the drive towards greater health equity and social justice in resource poor environments. This strategy is currently advocated by the WHO (2009); however, existing community participation and empowerment policy directives in health disaster mitigation have thus far failed to calculate the balance between self-treatment and institutional responsibility. While negotiating the balance of responsibility remains an ongoing issue that is central to the practice of medicine (Russell & Iljon-Foreman, 1985). It is thus not clear what impact current and future levels of self-care may have upon health professionals and the broader healthcare system in Bangladesh. However, findings from this study strongly suggest the synergies between self-care and PHC could enhance the impact of PHC policy and practice in terms of addressing the failure of health systems to deliver effective and equitable service to the poor throughout Bangladesh and many other areas of the developing world. If adequately supported by a decentralised healthcare system, self-care represents the means for individuals and households to respond to health problems in a cost-effective and socially acceptable manner. Appropriate adoption of this health behaviour also adheres to the 'spirit of self-reliance and self-determination' which was initially set out in the declaration of PHC in 1978 (WHO, 1978). It also demonstrates individual and community understanding of their potential to acquire better health through their own efforts, which reflects another central feature of PHC (Talbot & Verrinder, 2005). Self-care may also lead to other self-directed developments in areas such as literacy. It seems clear that renewed emphasis upon understanding the meaning and practice of self-care at community level provides the platform to achieve better PHC application and thus provide better healthcare provision for poor and vulnerable households.

7.5 Threats to Self-Care

Although self-care may have several positive implications for both lay users and the national healthcare system, the adoption of this health behaviour is not without current and future threats.

7.5.1 The Healthcare System

Although the healthcare system can be beneficial to strengthening resilience to illness, which is discussed below in section 7.6.1, some of its components can have a detrimental and eroding impact upon self-care adoption. These were most saliently expressed through the interaction between patients and healthcare professionals. Negative interactions between patients and doctors represented an area of constraints on self-care behaviour. The use of self-care was widely derided by many healthcare professionals in Chakaria and Domar, generating an atmosphere in which patients became fearful of punishment and humiliation if they revealed their self-care behaviours. The sentiment of 'being in trouble' or 'scolded' by doctors for using self-care was commonly recounted. The consequence of negative interactions with doctors was for participants to either restrict or stop levels of communication with doctors regarding their use of self-care. As a result an opportunity is lost to provide a supportive environment which can guide how people use self-care for various illnesses.

It has been argued that health professionals are in a key position to empower patients through enabling language designed to motivate and facilitate behaviour change towards self-care adoption (Tattersall, 2002; Chambers, 2006). They also have the opportunity to ascertain the suitability of such practices (Dill et al, 1995). The manner in which they obtain information and the language used to support appropriate self-care practise or deter inappropriate self-treatment can be a crucial avenue in supporting future self-care strategies. Davies (2006) called for a more emancipatory holistic healthcare model incorporating self-care which moved away from current paternalistic biomedical models. This appears to be a pertinent suggestion with regards to current findings which indicate that an avenue of resilience building and support is not provided by many healthcare practitioners as interactions with patients are not informative, motivating nor supportive of self-care. A paradigm shift of this kind would be applicable to self-care coping in Bangladesh and a means of providing better institutional support for local level disease management.

7.5.2 Societal Change

Self-care is often strongly linked to indigenous knowledge and use of traditional medicine. However, some societal changes were perceived to be a corroding influence on the extent, effectiveness and type of self-care adopted. An expanding biomedical system and some changes in attitude towards efficacy of traditional measures were

frequently expressed by participants as the reason behind a reduction in traditional self-care practices;

> "*Treatment has become easier. Once there was a time when we were extensively faced with cholera and diarrhoea. Now it is easier to get treatment for these, just give saline and it gives a cure. At first there was no doctor which is why people used the traditional practices, but now you can go and find a doctor very easily. Also the traditional methods are not available now so people are not following these practices. You can see this in the younger people here, sometimes they try the traditional methods, but usually they just go straight to the doctor. Other times they see the self-care and think it is good, but they do not have the knowledge to use it themselves so they just go to the doctor…Today the mentality has changed*." (Interview 4)

As a result these aspects of societal change within the rural Bangladesh society could be associated with diminishing self-care adoption and the potential erosion of traditional self-care strategies in the future.

However, the utilisation of certain self-care practises is perhaps more complex and more deeply ingrained in Bangladesh society than initially implied by the quote listed above. For example, it has been previously documented that traditional remedies are used as a means of resisting modern medicine or asserting traditional culture (Gardner, 1995; Ngokwey, 1995). However, findings from this study in Bangladesh do not necessarily concur with the idea of rejecting western medicine as biomedical treatments are often pursued in the event of unsuccessful self-care adoption. Similarly, the assertion of traditional culture through herbal remedies appears to occur more through personal preference, a history of effectiveness for certain illnesses and perceived advantages through the 'naturalness' of the treatment, rather than any overt attempt to maintain a cultural practice. Although there are generational influences in the use of many traditional remedies with a greater number of elderly participants demonstrating knowledge and use of these types of practices, there were also a number of younger adults conversant in this area. Adoption and knowledge among a younger generation of rural Bangladeshis within Chakaria and Domar dispels notions of a growing, modern healthcare system having a deleterious impact on all aspects of traditional medical cultural practises at the community level. It cannot be denied that increased provision of health practitioners and some aspects of developments in healthcare provision are factors in changing the health seeking behaviour and attitudes to healthcare for many people in Chakaria, Matlab and Domar. However, traditional types of self-care appear to be surviving through expanded medical pluralism and developments in healthcare

provision within rural Bangladesh. Although certain wider societal developments will continue to represent a threat to self-care and may continue to diminish the use of certain traditional self-care measures, there appears to be a strong enough base for the continued use of self-care into the future.

7.5.3 The Unregulated Health Market

Perhaps one of the greatest threats to self-care derives from a manipulation of self-care practices themselves rather than any external erosion of self-treatment behaviours. As previously documented the use of self-medication was common place amongst the three research sites. Utilisation of medications purchased over the counter using an old prescription or without a prescription at all, often led to an inappropriate response in treating an illness. This situation is further compounded in the Bangladesh context by the vast array of unqualified and unregulated health providers who often sell medicines which have exceeded their sell by dates, or sell products based on customer purchasing capacity which often do not meet the medications dosage requirements. High levels of illiteracy amongst the Bangladesh population can further accentuate the risks associated with medication consumption from unregulated outlets. The combination of these factors creates an environment in which self-care is neither safe nor appropriate as documented within this thesis. The perpetuation of these forms of self-care within components of healthcare delivery that are unregulated provides ammunition for those who argue against self-care.

7.5.4 Self-Medication through Modern Pharmaceuticals

Research findings identified a large tendency to self-medicate through modern medicines and antibiotics in response to illnesses such as fevers and particularly diarrhoeal disease. Van der Geest (1987) suggests this type of self-care behaviour indicates reduced degrees of self-reliance as the individual has become dependent on western medicines. This endorses the view that modern pharmaceutical dependency is an important aspect of healthcare in developing countries (Hardon, 1987). Self-Care at the household level becomes limited in Bangladesh by this dependency, as individuals engaging in self-treatment are invariably left in the hands of semi or unqualified practitioners. If taken inappropriately, as documented in many cases within Chakaria and Domar, medications for diarrhoeal disease can lead to unnecessary individual risks

and growing bacterial resistance to antibiotics (Hart & Kairuki, 1998; Okeke et al, 1999). Previous research has highlighted that this practice can lead to treatment failure, high costs and even deaths (Kamat & Nitcher, 1998; Beckerleg et al, 1999). Self-care for diarrhoeal disease would be severely limited if these outcomes were a consistent feature. However, findings from this research did not identify considerable amounts of treatment failure through this approach. Additional costs were incurred compared to the more cost-effective herbal and home based methods, but this was often less than the amounts required to seek professional consultation. Therefore participants appeared to be prepared to incur some initial additional costs through adoption of alternative medication options if this reduced the likelihood of travelling to the local town to pay for doctors or visit local hospitals and clinics.

In this study it became clear that almost all the participants self-medicating with over the counter medications (OTCs) in response to diarrhoeal disease were doing so in an improper manner. People in Chakaria and Domar seemed to lack knowledge on how medications worked and the way in which they should be taken. Understandings of dosage and timing of medication consumption was very poor. The main driver of self-medication appeared to be achieving a speedy resolution to the diarrhoeal disease. Therefore duration and amounts of medications to be taken were not adhered to as participants believed greater frequency of medication consumption expedited recovery times. These types of medication consumption indicate the need to improve the lay person's level of knowledge regarding medications, particularly the workings of antibiotics. Information regarding expiry dates, the length of time required for medicines to achieve maximum benefits and the value of completing a full course must be better understood at the community level for self-medication to occur in a more appropriate and safe fashion. This is explored in greater detail below.

7.5.5 Development of Critical Consciousness

An alternative consideration with regards to the findings presented from this research could be maximizing the quality of services provided to ensure all treatment is beneficial to the patient thus reducing acts of inefficient and/or inappropriate self-care adoption. As documented in a number of interviews and focus groups, treatment recipients were readily prepared to access modern pharmaceuticals through local drug vendors and grocery stores located within the research villages. The high propensity for

systems of payment flexibility and credit among semi and unqualified providers creates demand for rapid low cost medication supply and ensures treatment avenues will always be available to households with limited purchasing capacity. As previously documented, this system is not always beneficial for the patient if self-medication is adhered to in this manner. It is therefore important to promote consumer education pertaining to the medication and treatment options available within the pluralistic network in Bangladesh.

Some public health advocates have suggested retail drug outlets as a potential source for community based information about medicine (Price, 1989, Goel et al, 1996). However, to ensure this is adequately disseminated standardized training and qualifications for providers should be concretely implemented, regulated and adhered to (Ahmed et al, 2009). Although training provision is beginning to be offered through some NGO and government programmes (Iqbal et al, 2008), the overall knowledge base is below minimum levels of acceptable curative care (Ahmed et al, 2009). Kamat and Nichter (1998) have questioned the feasibility of such an intervention in view of facilitating adequate support for such training from the providers themselves. This is a point reinforced by the reluctance of some drug vendors to adhere to training and regulation (Edgeworth & Collins, 2006) and further emphasized by statements from BMA personnel; "*Don't try to qualify the unqualified*" (Byron, 2004, p. 11). However, it should be noted this perspective may be coloured by elements of protectionism in order to maintain current service provider – patient dynamics.

Therefore, if the providers and the industry itself are not motivated to regulate and enhance service provision in this area of medical distribution, then consumer education becomes a paramount factor. According to Kamat and Nichter (1998) within this context it is necessary to create an environment where it is in the interests of providers to enforce greater rigidity in regulation. Through the dissemination of education concerning appropriate use of medicines and the profit motives behind some providers' reasons for medication distribution and flexibility in payment, consumers can develop a 'critical consciousness' of medication consumption. This argument holds synergy with the Freirerian concept of 'conscientization' which is the process through which individuals become more aware of the sources of their oppression (Blackburn, 2000). In the context of self-medication in rural Bangladesh such an approach may alter the

dynamics between private providers and health consumers. Private provider practices will not alter their relationship and interactions with customers unless there is an indication that offering more responsible forms of treatment supply will pay off economically. Therefore, through the promotion of systems to ensure a critically aware consumer in dictating the type of medications received the medical system can aim to change to provide better support for households undertaking self-care.

However, findings from this research have consistently highlighted the consumers' limited purchasing capacity. Therefore, can the consumer afford to become more critical given their economic condition and weak financial capital with resulting reduced choice of health provider. If patient empowerment is the means of ensuring safe and appropriate self-care, then greater attention towards poverty reduction at the household level is also required. In conjunction with such an approach NGOs and GOB health personnel would continue to implement education for rational drug use in the event of illnesses such as fevers and diarrhoeal disease. Through this combination of strategies self-care could be strengthened to ensure a reduction in concerns over the safety and appropriateness of self-care practices used to treat common illnesses such as diarrhoeal disease. Importantly, this dissemination would not happen in isolation as varied avenues for health education can be explored and promoted to fortify household resilience.

7.6 Opportunities for Self-Care

Given the current socioeconomic situation in rural Bangladesh it is likely that self-care will continue as one of the dominant forms of treatment response to various illnesses, particularly for those households living at the greatest levels of poverty. The question therefore remains how to adequately support self-care as an effective and appropriate means to attend to common acute illnesses such as diarrhoeal disease. Various avenues have been identified through this study pointing to ways forward for ongoing and expanded self-care adoption.

7.6.1 The Role of Government

The value of adequate support for self-care is clearly essential given the prominent evidence of this health behaviour, its cost-effectiveness at household level, potential cost-effectiveness for service delivery and impact within development agencies PHC approach to improved health care delivery. These aspects engender questions of vulnerability reduction, reinforcing household resilience, patient empowerment and critical consciousness development. Since poverty reduction strategies will never be straightforward, the development of the means to provide sufficient and suitable support could prove essential in enabling safe and appropriate self-care practices to be adopted and/or continued. Recent international policy directives recommending strategies to strengthen self-care at the household level recognise these principles. The policy includes sensitisation of professional health bodies, intersectoral collaboration between the health sector, NGOs and community-based organisations and the proposition that national government should prioritise self-care within national PHC plans and programmes (WHO, 2009). While this latter issue may not currently be a priority within existing GOB PHC policy, there is evidence of a move towards greater self-care support on behalf of the GOB.

Two initiatives came to light during this research which focussed on the provision of natural materials used in certain self-care practises. The first of these was an initiative delivered through decentralised government health facilities. In Chakaria the local government hospital made provision within the hospital grounds for a garden which provided a number of plants and shrubs which could be used in herbal medicines. According to staff at the hospital the garden was free and patients were encouraged to access the materials if they wished to adopt herbal practises which required any of the plant life available in the garden.

Although this is a positive move by government health facilities and in theory is supportive of self-care as it provides a space in which self-care measures can be accessed, the reality was low levels of utilisation. The garden itself did not provide many forms of plant life (see picture 7.1 below), it was overgrown and there appeared to be little knowledge of its purpose amongst research participants and even among individuals who lived within the vicinity of the hospital. However, initiatives such as the herbal garden should continue to be encouraged as it has the potential to be highly beneficial for individuals who adopt self-care or individuals who want to supplement the medical care received at the hospital with herbal remedies. Providing a centralised

space to grow certain medicinal plants could also be beneficial during times of flooding if certain locations lose access to natural materials as previously discussed.

Picture 7.1 Herbal Garden at a Local Government Hospital

Source: Author

The role of Government in supporting self-care was also highlighted during interviews and focus group discussions. A handful of participants highlighted the distribution of plants that are beneficial in supporting people's health either in their medicinal qualities or by providing nutrition through fruit. The success of this type of strategy is highlighted in another developing country context in Box 7.1. However in the research sites this level of coordinated support was not apparent. Plants were advertised in the local press at discounted rates for households to purchase. While these initiatives should be commended, it is recommended that they need to go further as the number of people accessing this form of support was very low. Distribution of plants would need to be further subsidised if it is going to fall within the purchasing power of impoverished households with limited budgets. Messages surrounding the benefits of having plant life within the home also need to be better disseminated. Households may therefore better understand the potential impact ownership could have upon better facilitating household disease management through self-care practices.

Box 7.1 Institutional Self-Care Support: an example from Beira, Mozambique

A University in the city of Beira central Mozambique is facilitating self-care for hundreds of socioeconomically deprived households affected by many diseases associated with poverty such as cholera and HIV/AIDS. The latter is a particular problem as prevalence rates are reported at almost 27 per cent (Ayisi & Whiting, 2004) in this part of the country which has also resulted in high rates of malnutrition amongst many members of the infected population. In response to these widespread rates and high levels of disease risk in the slums of Beira the University is attempting to ensure households have the opportunity to provide some form of care for themselves. Consequently, a community health project based at the University has been distributing Moringa trees to households within impoverished urban areas. The Moringa tree was selected as it offers a number of medicinal advantages to beneficiaries. The leaves, which can be eaten fresh or cooked, are highly nutritious containing high levels of Vitamin C and A, potassium and calcium which provides some sustenance for many households struggling to meet their daily caloric intake. There is also evidence of antibiotic activity within the Moringa tree which can be used to treat a number of illnesses. A combination of leaves and roots are used to treat diarrhoea (Fuglie, 1999) along with a range of skin infections, gastric illness, fevers and throat infections (Fahey, 2005). Finally, the tree is extremely resilient and able to survive long periods of drought as well as flooding. It is therefore accessible to the household throughout differing seasons and extreme climatic conditions which can affect this part of Mozambique on an annual basis.

This simple and relatively low cost intervention provides a means for households at risk of illness and disease to implement some aspects of self-care if they so chose. By supplying this natural resource the household becomes empowered to utilise self-care in response to particular illnesses, thus ensuring the potential for relatively easy, quick and low cost forms of treatment to be undertaken by the household.

Despite the relatively low impact of GOB support for self-care within Chakaria, Domar and Matlab, these two initiatives demonstrate the potential for future facilitation of self-treatment methods at the household level. The self-care strategy has recently come under government consideration for inclusion in national health policy. Guided by WHO (2009) directives the GOB is working to ensure greater levels of self-care participation through the existing network of community clinics and CHWs as stated below by government health policy staff;

"Self-care is being explored at the policy level here (GOB) and we are exploring if it might be included into the next national healthcare plan. The government is considering self-care in health policy and the Prime Minister is very keen to support this as she promotes support for communities…Self-care can be thrown at the people, but with the right support, it should be addressed through the community clinics and through the health workers"(Key Informant Interview 10).

If put into practice, these measures indicate the GOB's acknowledgment of the role self-care can play in disease management. It is also a clear indication that the government is establishing the mechanisms to facilitate greater levels of self-care knowledge, support and training within Bangladesh. These measures respond to calls for the integration of self-care as an essential component of primary health care and acknowledge its potential benefit for both the people and the healthcare system in Bangladesh.

7.6.2 The Role of NGOs

Bangladesh has a particularly strong NGO sector which stems from the emergence of many local organisations which assisted in national reconstruction following independence in 1971 (Lewis, 1999). The sector has steadily increased with an influx of international organisations and the continued rise of Bangladesh organisations which have secured aid packages in excess of $50million (Hulme and Edwards, 1997). Some of the largest NGOs, such as BRAC, Grameen Bank, Proshika and ASHA, were the first to introduce micro-credit programmes. These organisations currently reach over four million households throughout the country (Lewis, 1999). There is extensive NGO involvement within the three study sites from a number of different organisations predominantly offering micro-credit assistance in the shape of loans. However, health services are promoted by two NGOs[48] through either access to CHWs, community nurses and some discounted health provision for NGO member households. Involvement with these NGOs influences the adoption of self-care by promoting the knowledge and means to treat certain illnesses, particularly diarrhoeal disease within the home and through services offered by public and private health institutions operating across the respective field sites. The promotion of a community development approach is strongly adhered to within both NGO's health initiatives. This may explain the significantly higher levels of self-care adoption identified through the questionnaire survey in Matlab which has extensive decentralised low cost healthcare provision and health education programmes offered by one NGO for over forty years. Chapter 5 highlighted NGO involvement revealing some highly beneficial outcomes expressed by a few participants in Chakaria and Domar in terms of health related knowledge and facility accessibility. This is through combinations of education dissemination from

[48] The two NGOs are BRAC and ICDDR,B. Full descriptions of the organisations, including their respective health development programmes, are presented in Appendices 1, 2 and 3 respectively.

NGO health personnel, decentralisation of health services to the community level and assistance from CHWs in the case of Domar.

In terms of an impact upon self-care it would appear that medical distribution and a reduction in the direct costs associated with treatment facilitate greater accessibility to the healthcare system, thus potentially reducing self-care dependency and likelihood of its adoption. However, education and health workers' involvement with households also offered a means to promote self-care for certain illnesses; this was particularly applicable to managing the onset of diarrhoeal disease as outlined in Chapter 5. Therefore, the contribution of NGOs leads to a mixed picture of increased knowledge to both undertake home based practises such as ORS, or to seek external treatment from local health facilities.

Exposure to these health education messages regarding self-care and health system services indicates that there are a number of benefits for those households that are members of NGO health programmes or reside in areas where these health programmes are operational. The question remains whether levels of empowerment in health seeking behaviour and self-care adoption are replicated across other households and villages outside health programme initiatives. Criticisms have been levelled towards the notion that the potential enhancement of livelihoods within one group in a community may undermine the livelihoods of another (Murray, 2001), or lead to exclusion of network outsiders (Portes, 1998). These are salient concerns in relation to empowerment and whether the initiation of some self-care supporting initiatives produce wider benefits for the entire community.

There is some evidence to suggest a degree of 'spill over' for households that are not members of NGO health initiatives in Domar. However, this was limited compared to previous research in this area of Bangladesh (Edgeworth & Collins, 2006), which may be due to the lower number of households with access to the health packages offered by the local NGO. Health system access and education dissemination had been increased on a few occasions for households not involved with the NGO. Kinship ties and horizontal networks were the primary agents in enabling engagement with either the health care system or adoption of self-care. In specific reference to self-care for diarrhoeal disease, knowledge of self-care treatments provided by NGO personnel were disseminated amongst community members to households that were not originally part of the self-care dissemination process. The extent of 'spill over' was more difficult to

assess in Chakaria as the entire village was subject to specific NGO health and development programmes. An area for future research would be assessing the extent to which initiatives and information spread to neighbouring villages that were not part of the NGO's health strategies and development programmes.

In both Chakaria and Domar the role of NGOs in health information dissemination can serve to both increase the use of local health facilities and adoption of self-care. Many of the messages surrounding self-care utilisation provided by NGO personnel increase the likelihood of informed self-care decision making. This is likely to reduce the extent of inappropriate self-care practices and improper health seeking behaviour in general. NGOs therefore provide a highly valuable role in ensuring self-care practices are in the best interests of the community. Their value is further increased when dissemination of health messages are able to reach households who are not NGO members. This process supports arguments from Ahmed et al (2003), concerning empowerment as a means through which self-care in Bangladesh is undertaken and increasing. It would appear findings from this study reinforce the notion that widespread diffusion of preventative and basic curative health messages through NGO personnel has served to increase households' capacity to recognise, diagnose and undertake appropriate forms of treatment (both self-care and seeking support from health practitioners) in response to common illnesses such as diarrhoeal disease. The strongly established NGO culture in Bangladesh is thus a strong platform on which to continue to support households in their self-care decision making and practices within the myriad of health seeking behaviour choices available in the rural Bangladesh context. This platform could be strengthened further if self-care information and support can be incorporated into the education system. Several national NGOs have a strong presence in this sector (running their own schools and curriculum in some cases), which could serve to underpin a more sustainable approach to self-care support.

7.6.3 The Role of the Household and Community

Within the Bangladesh context the importance of the household and community cannot be ignored in terms of coping mechanisms and responding to ill health. Chapter 3 discussed the influence of household dynamics and wider community relations in the study of rural Bangladesh and the topic of health. Within the chapter Zaman (2005) highlighted the centrality of the family unit in health decision making, and findings

from this thesis indicate this process is also applicable to self-care adoption and implementation. In a similar fashion to some of the literature examining support for self-care in developed countries (Hennesy, 1989; Orem, 1995; DoH, 2005), wider household and community relations can act to facilitate and support people's self-care decisions. This was exemplified in Chapter 6 through the actions of one individual in Muhuripara who facilitated self-care in circumstances in which alternative treatment options may not have been undertaken. It was also demonstrated in both Chakaria and Domar by the role family members played in self-care provision and administration to the patient. Furthermore, self-care actions often appear to reflect decisions made within the household and wider social networks either through advice on self-treatment options and learning in regards to self-care methods preparation and administration, particularly herbal treatments. Although there was some evidence for self-care decision making and actions which took place without support from family or household networks, the majority of self-care in rural Bangladesh appears to be influenced by these relationships.

Household relations and community networks thus have a fundamental role within self-care application in rural Bangladesh. The implication is therefore that the centrality of family must be sufficiently understood and appreciated in any future strategies directed towards self-care support. Family members can build on the existing safety net role they currently embody by serving to act as mechanisms for continued self-care learning and dissemination of self-care practises. The household unit can also serve to supervise quality of self-care administration to those family members less experienced in self-treatment. Finally, the household must also remain an important player in the referral process if self-care strategies either fail or are not deemed an appropriate response to the illness in question. If education dissemination through NGO channels is employed in line with the empowerment strategy previously suggested these organisations should consider the household unit in the propagation process. Although this is not a solution to concerns regarding treatment misuse and the ability to make accurate diagnosis (Vissing, 1987), it will serve to strengthen an existing 'safety net' readily employed at community level within rural Bangladesh. By building on local support networks in this fashion, the case for self-care adoption is one which adheres to some of the mechanisms advocated by the Hyogo Framework for Action (HFA) (2005) outlined in section 7.3.4 and Chapter 1.

7.7 Summary

This chapter discusses the key empirical findings presented in Chapters 5 and 6 in relation to existing self-care literature and conceptual ideas previously covered in Chapters 2 and 3. In doing so the implications of self-care adoption in the context of rural Bangladesh have been examined highlighting its complex nature and reinforcing the many differing impacts self-care can have as a disease management strategy. These outcomes are summarised in Table 7.2 in relation to the research objectives initially stated in Chapter 1.

Some of the central themes which emerged from this discussion are the positive implications of self-care use upon both the lay user and the household. These were particularly prominent in terms of economic savings on healthcare expenditure, circumnavigating certain restrictive gender and cultural practises for some households and offering the means to preserve levels of dignity through the empowerment of self-treatment as well as avoidance of 'external' care. These benefits go some way to explaining the high propensity of self-care adoption and shed light on its continued implementation within an expanding pluralistic healthcare system in rural Bangladesh.

However, the applicability of self-care as a disease management strategy within a natural hazard environment was questioned. Some methods such as ORS purchase or homemade treatments were beneficial during periods of flooding in which healthcare access can be restricted. Conversely, herbal methods were often inaccessible thus increasing levels of disease vulnerability as the households' response strategies became depleted. Herbal remedies usually used to treat fevers, colds, skin infections and diarrhoeal disease – which can all increase at times of flooding, were often redundant as flood waters destroyed or restricted access to plant life. These types of self-care strategies were then affected to either the same extent or at times an even greater extent than other forms of health care provision.

Further discussion points emerged from the wider implications of self-care adoption on the healthcare system. In particular the role of health professionals was seen as needing to come under scrutiny in facilitating support for households' self-care consumption, as well as levels of self-care promotion. Overall, the need for health professionals to exhibit greater sensitivity regarding individual cases of self-care adoption is circumscribed by excessive demand side factors in health service provision. Until these

Table 7.2 Summary Framework of Thesis Contribution to Knowledge

Objectives / Thesis Outcomes	Examination of self-care as a disease management strategy	Identification of practises indicative of appropriate and inappropriate self-care	Lessons drawn from self-care as a disease management strategy
Findings	Self-care widely used across different age, gender, education and location. No significant difference between these variables. Traditional (herbal & homemade remedies) and modern pharmaceuticals main types of self-care in response to diarrhoeal disease, fevers and colds. Illnesses with perceived greater severity not treated with self-care Implemented in isolation and/or as part of sequential health seeking behaviour	Use of ORS (purchased and made), homemade practises (such as banana curies) and herbal remedies (*tankumi*) indicative of appropriate practice in the eyes of participants with some biomedical support. Self-medication indicative of inappropriate practice due to lack of knowledge regarding medication use, however still perceived as appropriate in the view of many participants	Perceived effectiveness amongst patients Cost effective strategy Incurs low opportunity costs Illness prevention and response strategy Applied in response to multiple disease risks Adopted by all community members regardless of age, gender, socioeconomic status
Discussion Points	Self-care representative of social approach but would benefit from holistic self-care approaches Enhances empowerment and dignity through use of effective local resources and knowledge Patriarchal and cultural gender dimensions negotiated. Facilitates male transition into care giver role	Lack of support from health professionals to re-affirm appropriate self-care actions Inappropriate self-medication exacerbated by an unregulated health market Need for development of critical consciousness in medication purchases	Limited by impact of environmental hazards such as flooding The danger of erosion from the health care system and wider societal developments Effectiveness and impact could be further increased through improved government and NGO support
Extended Contribution to Knowledge	Role of self-care synonymous with third and fourth priority actions (indigenous knowledge & local capacities) in Hyogo Framework	Self-care actions indicative of inappropriate treatment failed to negatively impact illness outcomes and impede patient's recovery	Communities able to effectively manage risk and impact of endemic disease such as diarrhoea through self-care

measures are alleviated through the increased provision of resources, finance and health personnel, any paradigm shift towards holistic healthcare models which incorporate self-care as a central tenet of health will be difficult to fully realise.

Integration of self-care into the existing healthcare system in Bangladesh is still possible. Building on both the widespread implementation of self-care at community level and many of the cultural dynamics of household and community relationships outlined in Chapter 3, this chapter addressed the mechanisms which present considerable leverage for the assimilation of self-care into wider healthcare provision. Prevailing levels of faith and trust in many self-care methods combined with a strong belief that healthcare remains a community and household responsibility indicates the lay consumer would be receptive towards any policy moves to place greater levels of healthcare in the hands of the patient. This is not to suggest a total transfer of responsibility away from government, NGO or private healthcare providers, thus further disenfranchising the poor. It does however imply that community and household involvement in self-care can be increased through greater levels of healthcare support from these various institutions in a manner which would lead to greater levels of self-care integration. Community self-care may not change, but institutional support would move towards those households adopting self-care. Examples of this were discussed through the potential contribution of the CHW network operating in the three research sites. The CHWs could serve to provide education, training, supervision and guidance on self-care practises, as well as alleviating fears held by biomedical practitioners over the unsupervised nature of self-care utilisation.

These ideas gained further standing through discussions on the opportunities for self-care that outlined the role of both the GOB and health NGOs. Potential policy changes by the former towards inclusion of self-care within PHC plans and sensitisation of professional health bodies for self-care offers great encouragement for the self-care agenda at the national level. Although some existing government strategies such as the discounted sale of medicinal plants and the provision of herbal gardens at district hospitals have had a relatively low uptake, they remain constructive indications nonetheless. NGO health programmes also offered considerable potential to increase self-care capacity, which can in turn have positive implications for households not involved in NGO programming.

Self-care does not represent a panacea for existing problems with disease risk or healthcare response as certain threats to self-care have been clearly identified within Chapters 5 and 6 and discussed in detail within this chapter. Although issues such as certain societal changes and increased healthcare provision may not represent the complete destruction of self-care, they do signify considerable erosion for many individuals and households. Perhaps the greatest challenge to the whole self-care debate for rural Bangladesh is the extent of inappropriate self-treatment. In particular the widespread use of self-medication was conducted in a manner deemed to represent a danger to the patient, especially in terms of antimicrobial resistance. This is exacerbated by the unregulated health market and low levels of medication knowledge amongst the lay consumer. The development of a 'critical consciousness' amongst consumers may create an environment in which the health market is forced to instil greater rigidity in regulation. However, the realisation of patient empowerment in self-medication is likely to be hamstrung by continued household financial capital restrictions. The very nature of this area of self-care highlights the juxtaposition of ill health and poverty, within which self-medication in rural Bangladesh is always likely to embody a second best choice health seeking behaviour.

This chapter consolidates the examination of self-care for health in rural Bangladesh. By discussing the implications of self-care on the household and the healthcare system the chapter has highlighted the complexity of the issue. It has also identified the potential for self-care and the means by which it could be better supported to act as an effective disease management strategy. The following chapter concludes the main arguments made in this thesis and details its wider research implications.

CHAPTER 8: CONCLUSION

"No system of medicine is perfect, and every system has its own contribution to make."
(Hyma & Ramesh, 1994, p.81)

8.1 Introduction

This thesis began with the aim of examining the adoption of self-care for health in parts of rural Bangladesh. Focusing upon the adoption of self-care in response to ill health, with specific reference to diarrhoeal disease, the study also identified behaviours indicative of appropriate and inappropriate self-care and the implications these actions have in terms of disease management. In doing so the research revealed how self-treatments are utilised, who practises self-care, types of self-care undertaken and the external factors that influence self-care uptake. Drawing upon mixed methodology the research presented a detailed examination of self-care in rural Bangladesh through discussions of the self-care concept, lay and professional understandings of self-care, the process of self-care utilisation and links to health infrastructure and wider disease management processes. Examination of these factors highlighted the predominant and widespread use of various self-care treatments for health. It demonstrated both the failures of current health service provision as well as the potential for better self-care integration into existing approaches to health care. This examination of self-care is valuable in that it provides an in-depth understanding of self-care and the wider structural and cultural issues which have arisen from researching self-care within rural Bangladesh through a mixed method approach. It therefore contributes to a limited base of literature concerning self-care in developing countries and provides a framework for empirical investigations of self-care within resource poor contexts.

This concluding chapter draws together the main ideas of the thesis in order to provide an overview of the research findings to highlight how this work achieved its aims and objectives, contributes to furthering academic knowledge and to consider possible directions for future research and policy directives. The chapter starts by covering the role of self-care as a disease management strategy and elucidates the wider lessons that can be drawn from self-care adoption.

8.2 The Wider Lessons from Self-Care Adoption

Field research established that self-care adoption is a widespread practice amongst the three research sites in Chakaria, Domar and Matlab. Through the implementation of a questionnaire survey and qualitative methods such as FGDs, interviews and participatory tools, self-care practices have been identified as a common treatment response for a number of minor acute conditions. Although rates of self-care were lower than previous studies from developing countries (Leyva-Flores et al, 2001; Bhatia & Cleland, 2001; Pagan et al, 2006) and Bangladesh (Ahmed et al, 2003; Cockcroft et al, 2004; Ahmed, 2005), this treatment behaviour was still highly prevalent amongst participants. Overall there were very few occasions in which a household failed to practise some form of self-care for health. There were also very few cases revealing self-care to be highly detrimental to the health of the user.

By focussing on people centred coping strategies within an endemic disease environment such as rural Bangladesh this study is useful in understanding how well communities are able to manage the risk and impact of disease. Macfarlane et al (2000) discuss the importance of local people in meeting public health goals and provide examples of how communities have empowered themselves to solve various health issues within contexts of disease risk. Similarly, this study has demonstrated how individuals, households and communities in three areas of rural Bangladesh have implemented traditional knowledge, used natural resources, adapted home-based ingredients and integrated modern pharmaceuticals as forms of effective disease management strategies. This is in contrast to focussing exclusively on external health initiatives such as vaccines, water and sanitation (WATSAN) initiatives and health education and behaviour modification programmes driven by key international and national actors in development. Examining the views, practices and local culture of self-care held by lay users themselves provided an indication of how well households are able to manage within their own environment and how well disease management strategies are being applied on the ground. In doing so, this thesis echoes some sentiments of a report prepared by the World Bank which concluded that strategies for change in health amongst the poor and marginalised must recognise their realities and invest directly in their organisational capacity (Narayan et al, 2000). The outcomes of this research also reiterate a view held by the WHO that self-care represents a primary

public health resource (WHO, 2001), which resonates with the principles of PHC (WHO, 2008) and community based initiatives (WHO, 2009). This leads to questions surrounding the lessons that can be drawn from the adoption of self-care as a disease management approach and how they can be more widely applied to community based disaster risk reduction.

8.2.1 The Value of Local Knowledge and Local Practice

Firstly, local level coping strategies applied through effective self-care measures offer an appropriate mechanism for responding to a range of illnesses in a disease endemic context. This research has identified a number of practices that enable households to manage both the risk and the impact of commonly encountered diseases. The manner in which these measures are applied and the level of knowledge and understanding attributed to self-care practices by households demonstrates local level capabilities in managing disease and illness. Additionally, the rural context of Bangladesh offers an environment in which locally adopted disease management can thrive and be used to their maximum potential. Due to the predominance of self-care, the way in which many practices are ingrained in cultural and historical aspects of treatment and the regular success of many methods means strong levels of trust and faith are attributed to self-treatment. Combined with the understanding amongst many elements of the community that responsibility for treatment resides with the household (with some wider community support) a strong platform for self-care exists at community level. This receptivity towards self-care ownership, practice and implementation resonates strongly with components of the Hyogo Framework (2005) in terms of building on existing indigenous knowledge and natural resource management to further enhance people's empowerment in disaster and disease management.

8.2.3 The Importance of Low Cost, Manifold Strategies

Secondly, low cost methods which can tackle multiple disease risks hold several benefits for the household in terms of cost-effectiveness, reduced opportunity costs and efficacy of responding to illness. Self-care practices have been documented within this research to offer substantial savings in comparison to different forms of external treatment (both formal and informal) for a number of different illnesses. The manner in which self-care methods are produced and administered reduces many opportunity costs associated with other forms of treatment response. These two factors represented

a clear advantage for many households in their decision to adopt self-care. The wider implication from this finding is for development agencies and other external institutions to provide similar means to reduce cost and time factors for impoverished groups in their attempts to minimise disease risks and illness. Support strategies for disease risk management and community based disaster management would also do well to recognise and replicate the manner in which self-care can respond to multiple disease risks. This has application not only as a prevention and response strategy, but also in the way certain self-care strategies are able to tackle a range of diarrhoeal diseases in comparison to some other disease reduction initiatives which are only able to tackle one disease at a time.

It is acknowledged that policy makers will have to weigh the potential benefits of greater self-care utilisation at the community level as an effective disease management strategy against alternative interventions that mitigate the impact of other diseases endemic in the Bangladesh environment. Considerable investment has been channelled into the increased provision of clean water and adequate sanitation facilities, often as part of wider development strategies supported by multilateral and bilateral development agencies (Hutton & Haller, 2004; Fewtrell et al, 2005; Clasen et al, 2006). A number of other initiatives have targeted individual and household behaviours in order to sustainably modify hygiene practices. Education and hygiene promotion campaigns have been at the forefront of these programmes designed to increase levels of health education, influence hand washing practices such as the uptake of soap, alter water and sanitation behaviours, and improve food handling (Curtis et al, 2000; Curtis & Cairncross, 2003; EHP et al, 2004; Frewtrell et al, 2005). These programmes have not always significantly affected diarrhoeal disease morbidity and mortality rates but they have highlighted a range of coping strategies employed to mitigate the impacts of disease on household health and livelihoods. These health initiatives should be considered along with any moves towards self-care support and integration into healthcare provision in setting policy priorities with respect to disease management in resource poor contexts.

8.2.4 Empowerment and Dignity

Thirdly, home-based treatments facilitate household empowerment and preserve and/or enhance dignity amongst users. Already widely acknowledged as an important

goal for marginalised households, as well as a central component of wider poverty alleviation initiatives (Ahmed 2008), any measures which are able to assist in dignity preservation and enhancement should be highly valued. These measures hold particular salience in regards to the personal nature of many health problems and the 'taboo status' associated with disease (Seabrook, 2001). Self-care can facilitate treatments within the household thus providing a measure of sensitivity to local cultural issues such as Islamic laws, 'conservative principles' and elements of patriarchy. The latter factor can be carefully addressed in the Bangladesh context, particularly with regard to any external intervention or development approach. The research findings demonstrated the differing circumstances in which men and women employed self-care strategies when responding to ill health. The context of these self-care decisions is reflective of broader social and cultural influences; however, other self-care practices challenged the status quo of gender dynamics in the rural Bangladesh context. By examining the less visible forces surrounding self-care uptake this study identified examples of male and female partnerships in providing home-based care in response to ill health. It also identified the use of self-care in minimising the impact of patriarchal relations upon some women and the manner in which men were able to maintain livelihood practices through self-care utilisation.

The process of self-treatment through local knowledge and practice can also harbour notions of empowerment and dignity, rather than dependency on external assistance. Processes which add to other evidence indicating community health processes initiated by households themselves can achieve a greater impact than external top-down programmes (Macfarlane et al, 2000). The wider lessons for community based disaster management appear to be nothing more complicated than locally focussed strategies which ensure high levels of local ownership. However, the health system does still have a role to play in achieving the maximum impact if such approaches are to be implemented.

8.2.5 Local Ownership with Targeted External Support

Therefore, the fourth lesson from self-care adoption is; local ownership of health should remain in the hands of the community supported by external health system measures. Given Bangladesh's current socioeconomic situation and the various advantages associated with self-care adoption, it is likely this health behaviour will

continue to play an active role in many rural households response to illness. Within this context, the value of appropriate and adequate support for self-care must be questioned in order to ascertain suitability and effectiveness in enabling the achievement of maximum impact and benefit. The success of locally owned and focussed self-care strategies may be further enhanced through the right types of external support. Supportive leadership and good governance have been suggested as pivotal components in the process of managing changing disease risks (Macfarlane et al, 2000). This thesis suggests NGOs and the GOB are well placed to deliver a number of key mechanisms of support that can further enhance self-care utilisation in Bangladesh. It is advocated that better engagement of the CHW network, expansion of some health education messages, provision of low cost interventions in the form of medicinal plants and improved communication channels with qualified health practitioners will serve to maintain and improve current self-care behaviours. These measures are all low cost and can be implemented without substantial changes to current healthcare support. This should ensure that these changes are both achievable and sustainable.

However, the research suggests important questions remain about the role health professionals can play in peoples' continued self-care utilisation. The predominance of existing self-care adoption combined with current failings in health service provision indicates that self-care methods are likely to be continued at the community level in response to the ongoing endemic disease burden. This thesis identified a disconnect between the practice of self-care and some health professionals understanding and support for this disease management strategy. As discussed in the previous chapter, health professionals are in a key position to ascertain the suitability of self-care practices (Dill et al, 1995) and empower patients and facilitate behaviour change towards better self-care approaches (Chambers, 2006). However, patient interaction with health professionals was deemed to be lacking in support, motivation and information to assist in future self-care strategies. In many cases health professionals are failing to fully understand the social and cultural processes involved in self-care adoption, a situation which can do more harm than good in terms of self-care support (Hogavinta, 1987). The primary challenge in this area appears to be the "integration of professional treatment with personal self-care repertoires" (Dill et al, 1995, p. 39).

In addition to calls from Davies (2006) for a paradigm shift towards holistic healthcare which incorporates self-care, this research concludes that language and communication amongst health professionals can become a central feature in guiding future self-care utilisation. Importantly, those health professionals working at the local community level throughout Bangladesh are uniquely positioned to guide and ensure appropriate self-care is undertaken to ensure its effectiveness as a disease management strategy. However, it remains to be seen whether qualified doctors in these areas of Bangladesh are receptive and willing to encourage people centred ownership of primary treatment measures. This is little more than retrieving some of the principles of PHC established at Alma Ata over thirty years ago and until the health system fully recognises the extent and value of locally practised disease management strategies, concerns over appropriateness of self-care will always remain. The challenge therefore remains to develop institutional ability to consistently develop and support people centred self-care strategies in response to endemic disease.

8.3 Coping with Environmental Hazards through Self-Care

One of the central features of this thesis was the exploration of self-care as a disease management strategy in response to diarrhoeal disease. As a disease of poverty, reflected in patterns of incidence related to physical environments and impoverished living conditions (Guerrant et al, 2002; EHP et al, 2004), diarrhoeal diseases remain an endemic environmental hazard and one of the leading causes of morbidity in Bangladesh (BBS, 2005). This study revealed the prevalence of self-care in response to diarrhoeal disease and the efficacy of several self-care methods from both lay user and biomedical health professional perspectives. As discussed in the previous chapter (Section 7.2.5) low opportunity costs and cost-effectiveness of self-care strategies ensures other assets are not drawn upon, guaranteeing the household's resource base is not depleted on a regular basis. Given the endemic nature of diarrhoeal disease, the ability to manage responses in an effective manner that limits the likelihood of restricting other mechanisms for coping with the daily realities of poverty is clearly advantageous.

A further point relates to the detrimental impact flooding imparted on certain types of self-care. The research revealed periods of sustained or flash flooding depleted the

natural resource base which many participants relied upon to facilitate herbal treatments made within the home. Many of these types of treatments were designed to tackle diarrhoeal disease, skin infections, fevers and colds; illnesses which invariably occur during the onset or proceeding periods of flooding. Within these contexts self-care did not represent an effective disease management strategy. Combined with the logistical and practical difficulties faced in accessing external health care at times of floods, levels of disease vulnerability were exacerbated and coping measures diminished. Although self-care can be an effective disease management strategy on a number of levels when dealing with endemic diseases such as diarrhoeal disease, this research suggests coping through self-care during the onset of an environmental hazard or disaster scenario such as flooding in Bangladesh, is not an arena where self-care can be at its most effective for health.

8.4 The Extent of Appropriate and Inappropriate Self-Care

The prevalence of self-care identified in this study adds further weight to arguments promoting analysis and examination of the forces which underscore this health behaviour, as well as refining the debate on the safety and appropriateness of many self-care practices. Previous research undertaken on the topic of self-care has employed a predominantly quantitative agenda that fails to address many issues within the literature surrounding the suitability of self-care as a disease management strategy. By utilising detailed qualitative measures it was possible to examine not only what types of self-care were adopted, but also the impact these methods had upon the patient and the household. Implementation of this angle of exploration within the research contributed to the limited body of evidence and speculation in the literature surrounding the practise of self-care in developing country contexts and helps refine the debate surrounding levels of appropriate and inappropriate self-care.

Identification of high levels of knowledge regarding natural remedies, treatments using home-based ingredients and the purchase of modern pharmaceuticals has served to increase households' capacity to undertake forms of treatment in response to ill health. Participants regularly demonstrated correct understanding of treatment measures in response to various common illnesses, including diarrhoeal disease. Some of the benefits associated with successful self-care adoption mirrored ideas and

examples scoped in Chapter 2. In particular, the use of ORS was widely regarded as an effective and appropriate strategy. The value of this particular form of self-care was further emphasised through the home-based variations (home-made ORS, rice-based ORS) frequently applied by many participants. Aside from medicinal benefits, cost-effectiveness and low opportunity costs, the utilisation of these home-based rehydration measures also highlighted the impact health education, dissemination and patient empowerment initiatives by NGO and Government can have upon people focussed disease management and coping. Whilst the implementation of these self-care strategies generated several potential benefits, the same cannot be said for the role and impact of self-medication treatments.

The research revealed a heavy reliance on self-medication in the three research sites through the regular purchase of medicines and antibiotics in response to common illnesses such as fever and diarrhoeal diseases. This raised health concerns due to the manner in which drugs were both purchased and administered to the patient. This is a process which is potentially harmful in terms of the quality of drug acquired from an unregulated health market and in terms of antimicrobial resistance within the patient. The extent of this self-care behaviour is indicative of inappropriate practice which adds to concerns voiced by critics of people centred ownership and responsibility of care amongst the community and lay users. Considering the unregulated nature of pharmaceuticals in rural Bangladesh, distributed by widely unqualified or semi qualified personnel, the ease and regularity in which medicines can be purchased, and the level of understanding and autonomy exhibited by patients, rural Bangladesh could be faced with long term issues in limiting the extent of inappropriate self-medication. The very nature of this area of self-care reinforces the inextricable linkages between ill health and poverty. Until measures can be established to reduce the self-reinforcing downward spiral of vulnerability associated with the health and poverty debate, self-medication in rural Bangladesh is always likely to represent a second best choice health seeking behaviour.

Self-care is further juxtaposed within the health and poverty debate in terms of deliberations surrounding the extent of health service provision for vulnerable and marginalised groups. The predominance of self-care is highly encouraging in terms of household disease management; however, there is a danger in over-emphasising or relying on household coping. In some quarters self-care is used to justify reductions in

health services as treatment response is removed from the state and placed upon the individual (Segall & Goldstein, 1989). As stated in Chapter 2, diminishing state health care provision often serves to distract from the broader social, economic and political aspects of disease vulnerability and structural responses to addressing the causes and responses to ill health (Redman, 2007). Any shift towards supporting individual self-care to achieve greater levels of health equity must not detract from broader efforts to provide improved health systems and reduce the inequitable access to care which currently exists in Bangladesh (Cockcroft et al, 2007). Negating responsibility to the population through a desire to decrease current stresses on the health system in Bangladesh is an issue which needs to be closely monitored to ensure the rural poor do not become further disenfranchised from healthcare provision and support. This study therefore concludes that self-care can be used as both a successful health promoting and illness treating activity for various endemic illnesses such as diarrhoeal disease. As such, it should be viewed as a supplement to existing and future health care provision and support.

Having concluded the main empirical outcomes of this research, the following sections reflect upon areas for further study, policy recommendations and research limitations, before providing concluding comments on the research objectives and the thesis as a whole.

8.5 Further Research, Policy Recommendations and Limitations

The outcomes of this study suggest possibilities for further research into the potential impacts of self-care as an appropriate disease management strategy. Building on some other empirical studies examining elements of health seeking behaviour (MacKian, 2002; Haussman-Muela et al, 2003), self-care in developing countries (Bhuyan, 2004) and Bangladesh (Ahmed et al, 2003; Ahmed 2005), this research has examined the adoption of self-care as a disease management strategy in the event of illness with specific reference to diarrhoeal disease. In doing so the study has helped identify methods indicative of appropriate and inappropriate self-care, as well as provide some lessons for wider disease risk management approaches. Although the research has specifically focussed on the case of self-care in rural Bangladesh the implications of these findings are likely to have wider resonance. Whilst circumstances in the research

communities accessed for this thesis are unique there are likely to be similar factors and relevance to other developing countries. Therefore, given the lack of research on this topic within resource poor contexts such as Bangladesh it would be valuable to carry out further studies of a similar nature and approach in order to compare findings from other areas of Bangladesh and other developing countries. An emphasis on different socioeconomic and cultural profiles may be of value in determining the transferability of ideas and initiatives in relation to future and further self-care support.

As mentioned in section 7.6.2 there is a need for future research that would assess the extent to which initiatives and information concerning self-care methods disseminated by local NGOs spread to neighbouring villages that were not originally part of these development agencies health strategies and programmes. There has been some evidence to suggest a 'spill over' effect can occur in terms of self-care knowledge and practice (Edgeworth & Collins, 2006). This effect was identified to a smaller extent in this study in Domar, but it was beyond the scope of the research to ascertain the same type of impact in Chakaria. An ongoing research process is required to examine future health education and self-care programme planning amongst local NGO and government health practitioners.

An area of further research which emerges from the ideas and findings in this thesis, but was not explored in focussed detail, is the potential impact of self-care on reducing patient and financial burdens on the Bangladesh health system. Evidence from developed countries suggests these benefits are attainable through the intervention of self-care programmes (Healthwise, 2000). This has been a driving force in policy directives suggested by NHS Direct and the Expert Patient Programme in the UK, as two examples (Tattersall, 2002; PAGB, 2003). If similar representative degrees of economic and/or resource savings can be identified within the context of struggling health systems it could signify several promising benefits for wider health service delivery. However, it was beyond the scope of the current study to ascertain what benefits self-care adoption may have on current and future health system delivery. Given the propensity for self-care in response to ill health in Bangladesh and the current failings of national health system delivery (Cockcroft et al, 2004), this is an area of research that warrants particular attention.

Concomitantly, the role of traditional healers, village doctors and other semi-qualified and unqualified health practitioners offering a range of treatment strategies across rural Bangladesh should also be explored in terms of self-care. At this stage it is not fully understood what potential role these practitioners could have in facilitating, guiding or prohibiting self-care adoption. Further research is required to ascertain different practitioners' interpretations of self-care, which could be an important component in establishing a supportive environment for future appropriate self-care strategies to take place. This is particularly pertinent for those patients with limited access to government facilities or those households who prefer treatment within the confines of the vast informal health care market operating throughout rural Bangladesh.

8.5.1 Policy Recommendations

In terms of policy recommendations this research suggests a number of key areas should be addressed to either improve self-care actions or provide a more supportive environment which will enable appropriate self-care to take place if required and desired. Firstly, the strong prevalence for self-medication with antibiotics in response to diarrhoeal disease appears to invariably be undertaken in an inappropriate fashion. Addressing limited knowledge about medication dosage, suitability of antibiotics as a treatment strategy and longer term drug resistance represents one area for action in terms of improving self-care strategies. People should therefore be better informed about the potential long term damage caused by antibiotics when dosage requirements are not adhered to. Information on antibiotic administration should also be provided to ensure medicines are taken correctly over the course of a day to reduce the ingestion of multiple antibiotics. Both government and NGO CHWs currently operating in each of the three research sites are best placed to transmit these messages. They are also suitably positioned within the communities and qualified to provide advice on antibiotic purchase as well as ensure medication administration can be monitored at the micro level. The previous success of health education messages concerning the use of ORS and homemade forms of ORS, demonstrated within this study by the frequent and effective use of such strategies in response to diarrhoeal disease, indicates positive connotations for similar strategies to be deployed focussing on antibiotic messages.

8.5.2 Political Will

There is international interest in human coping and resilience applicable to endemic disease environments with the importance of people centred risk reduction of infectious disease implied in policy agendas such as the Hyogo Framework (WCDR, 2005). These ideas resonate strongly with the concept and application of self-care, as identified throughout this thesis, representing a justification in WHO policy designs to promote greater understanding and support for what they label a 'primary public health resource' (WHO, 2000a; 2009). Recent policy developments in some developed countries such as the UK echo these moves towards greater patient empowerment and facilitation of self-care practices through direct access telephone lines (NHS Direct) and decentralised care initiatives (Expert Patient Programme). Despite these advances in self-care tangible policy developments within Bangladesh have yet to take place. In conjunction with ongoing research into understanding the ongoing implementation and implications of self-care, political will is also required to facilitate support and strategies to ensure self-care can be used for the best interests of the patient, household and wider health system.

Although to date there has been no translation of international self-care policy conventions into Bangladesh national health policy or action, there appears to be positive moves in this direction from central government. Chapter 7 highlighted that health policy makers appear to be both receptive to the ideas and application of self-care, as well as acknowledging the mechanisms required to ensure appropriate self-care actions can be undertaken. If current self-care support is converted into national health policy it would represent a very considerable step in acknowledging the extent of self-care and the value local households ascribe to their own process of coping and resilience to endemic disease through effective self-treatment strategies. Equally, government recognition of the role health professionals can play in providing a constructive environment for self-care actions to take place is a fundamental step towards ensuring the efficacy of disease management through local coping mechanisms such as self-care can be accentuated. It would also signify a highly positive move in terms of offering measures to identify and isolate inappropriate self-treatment and thus further enhance calls for self-care "to be used to its full potential for the benefit of both the people and the health system in a resource-poor situation like that in Bangladesh" (Ahmed, 2005 p. 51). It is highly encouraging that this study has been able to identify the possibility of current political will in establishing a framework for this type of people centred coping to be more fully realised.

8.5.3 Limitations

The first limitation relates to the time and scope of the research. As elaborated in Chapter 4, the questionnaire was conducted in all three research sites however, only Chakaria and Domar were accessed for qualitative research work. With additional time and resources the scope of interviews and FGDs would have been expanded to incorporate participants from the research village in Matlab. This would have provided an opportunity to examine differences in geographic location in more detail. It would have also enabled in-depth follow-up work to take place in regards to areas of interest highlighted by the questionnaire. For example, the significant rise in self-care utilisation in Matlab compared to the other two research sites.

A second limitation lies in the lack of observed illnesses with the majority based on participant reported symptoms and reported self-care practices. Illness can be a highly subjective experience (Giang & Allebeck, 2003) which is sensitive to both cultural and individual factors (Segal et al, 2002). Therefore efforts were imparted to ensure culturally appropriate language and limit the recall period of illness experiences within the range of research methods employed in this study. Similarly, a lack of observed encounters between self-care users and shopkeepers, pharmacists, and qualified medical professionals was also a limitation. This restricted the extent to which the language of interaction could be directly explored, particularly in the light of emerging issues within the research findings regarding the doctor patient relationship and self-care support. As previously stated in Chapter 4, the use of multiple methods that were pragmatic and appropriate to the overall aims and objectives of the research have served to strengthen validity and reliability. Deployment of these methods has also provided a means to dilute the effect any limitations imparted on the outcomes of this thesis.

Despite these limitations it is anticipated that research findings dissemination back to participants in Chakaria, Domar and Matlab, health policy makers and NGO personnel in Bangladesh will hopefully enable this research to inform current and future self-care strategies in the country. It is also hoped that both the qualitative and quantitative

components of this research can be easily replicated, thus presenting the possibility for further research work to be conducted into issues regarding self-care in other areas of Bangladesh and the developing world.

8.6 Concluding Remarks

This thesis extends understanding of self-care adoption in rural Bangladesh and in doing so makes an original contribution to knowledge in several ways. Firstly, the research identified the range of self-care methods adopted in three areas of rural Bangladesh. Secondly, the research demonstrated the application of self-care as a disease management strategy highlighting the value of appropriate treatments in responding to several endemic illnesses, including diarrhoeal disease. Thirdly, self-care methods indicative of inappropriate practice were isolated, highlighting the role wider social and cultural circumstances played in the adoption of these self-treatment measures. Finally, the research has documented measures which can support and strengthen current and future self-care strategies employed in rural Bangladesh.

The findings derived from this study contribute towards a limited body of research examining self-care in developing countries (Leyva-Flores et al, 2001; Bhatia & Cleland, 2001; Bhuyan, 2004; Pagan et al, 2006), including Bangladesh (Ahmed et al, 2003; Cockcroft et al, 2004; Ahmed, 2005). The findings concur with previous studies that identify the widespread utilisation of home-based practices as a measure of coping with ill health. They also build on the limited evidence base to provide an insight into communities' perspective of self-care and the determinants, obstacles and driving forces that influence the adoption of self-treatment at the household level. This sheds light on the implications of self-care for the patient and wider healthcare system. As demonstrated in this thesis, a key concern of the research has been identification of practices indicative of appropriate and inappropriate self-care methods. The findings produced from this research have contributed to debate within this area of self-treatment (Chapple & Rogers, 1999; Wilkinson & Whitehead, 2009) and provided support to certain self-care measures and the wider notion of people centred risk reduction of infectious disease (WCDR, 2005; IFRC, 2009; WHO, 2009). There is evidence of the crucial role self-care can play in coping with the insurmountable endemic disease risk environment in rural Bangladesh. Although, findings indicate

self-care is not a panacea, in certain circumstances self-care offers a low cost, effective and appropriate response to a wide range of conditions faced by the rural poor.

Above all, this thesis presented an in-depth portrait of self-care adoption and its application as a disease management strategy. Given the current levels of health care provision and socioeconomic characteristics in rural Bangladesh it is likely that self-care will continue to remain one of the predominant responses to endemic illnesses. Although self-care offers the means to achieve local level disease management, this must not overlook the many barriers people face in coping with health risks nor override necessary structural changes that provide greater potential to achieve equity and justice for the poor of Bangladesh.

REFERENCES

Abosede, O. A. (1984) 'Self-Medication: An important aspect of primary health care', *Social Science & Medicine,* 19 (7), pp. 699-703.

Adams, A.M. Cekan, J. & Sauerborn, R. (1998) 'Towards a conceptual framework of household coping: Reflections from rural west Africa,' *Africa,* 68 (2), pp. 263-283.

Adjuik, M. & Smith, T. (2006) 'Cause-specific mortality rates in sub-Saharan Africa and Bangladesh ', *Bulletin of the World Health Organization,* 84 (4), pp. 336-336.

Ahmed, S. M. Hussain, A. M. M. Sattar, M. G. & Chowdhury, A. M. R. (1999) 'A quick assessment of floods losses and post-flood rehabilitation needs in BRAC's programme areas,' In. S. M. Ahmed & H. S. Ahmed (Eds). *Experiences of deluge: flood 1998,* Research Monograph Series 15, BRAC: Dhaka.

Ahmed, S. A. M. Adams, A. M. Chowdhury, M. & Bhuiya, A. (2000) 'Gender, socioeconomic development and health -seeking behaviour in Bangladesh,' *Social Science and Medicine,* 51 (3), pp. 361-171.

Ahmed S. M, Rana A.K.M.M, Chowdhury M, Bhuiya A. (2002). 'Measuring perceived health outcome in non-western culture: Does SF-36 has a place?' *Journal of Health, Population and Nutrition*; 20(4), pp. 334-342.

Ahmed, S. M. Adams., A. M. Chowdury, M. & Bhuiya, A (2003) 'Changing health-seeking behaviour in Matlab, Bangladesh: do development interventions matter?' *Health Policy and Planning,* 18 (3), pp. 306-315.

Ahmed, S. M. (2005) *Exploring health-seeking behaviour of disadvantaged populations in rural Bangladesh.* PhD. Karolinska Institute.

Ahmed, S. M., Tomson, G., Petzold, M., & Kabir, Z. N., (2005) ' Socioeconomic status overrides age and gender in determining health-seeking behaviour in rural Bangladesh,' *Bulletin of the World Health Organisation,* 83 (2), pp. 109-117.

Ahmed, S. M., Petzold, M. Kabir, Z. N., & Tomson, G. (2006) 'Targeted intervention for the ultra poor in rural Bangladesh: Does it make any difference in their health-seeking behaviour?' *Social Science and Medicine,* 63 (11), pp. 2899-2911.

Ahmed, S. M. & Hossain, M. A. (2007a) 'Mapping of the healthcare providers in Bangladesh' paper prepared for Bangladesh Health Watch, Dhaka: BRAC.

Ahmed, S. M. &. Hossain, M. A. (2007b) 'Knowledge and practice of unqualified and semi-qualified allopathic providers in rural Bangladesh: implications for the HRH problem,' *Health Policy,* 84 (2), pp. 32-343

Ahmed, F. E. (2008) 'Hidden Opportunities: Islam, masculinity and poverty alleviation,' *International Feminist Journal of Politics,* 10 (4), pp. 542-562.

Ahmed, S. M. Hossain, M. A. & Chowdhury, M. R. (2009) 'Informal sector providers in Bangladesh: how equipped are they to provide rational health care?' *Health Policy and Planning,* 24 (6), pp. 467-478.

Akin, J. S. Griffin., C. C. & Guilkey, D. K. (1986) 'The demand for adult outpatient services in the Bicol region of the Philippines', *Social Science & Medicine,* 22 (3), pp. 321-328.

Alam, N. (1995) 'Predictors of diarrhoea in young Bangladeshi children', *Journal of Tropical Paediatrics,* 41 (5), pp. 278-280.

Aldana, M. J. Piechulek, H. Sabir, A. A. (2001) 'Client satisfaction and quality of health care in rural Bangladesh,' *Bulletin of the World Health Organisation,* 79 (6), pp. 512-516.

Aljunid, S. (1995) 'The role of private medical practitioners and their interactions with public health services in Asian countries,' *Health Policy and Planning,* 10 (4), pp. 333-349.

Anan, T. (2007) *Troubled waters in Bangladesh.* [Online]. Available at: http://news.bbc.co.uk/1/hi/world/south_asia/6943873.stm.

Andaleeb, S. S. (2000) 'Service quality in public and private hospitals in urban Bangladesh: a comparative study,' *Health Policy* 53 (1), pp. 25-37.

Anderson, J. A. D, Buck, C, & Danaher, K (1977) 'Users and non-users of doctors - implications for self-care,' *The Journal of the Royal College of General Practitioners,* 27 (176), pp. 155-159.

Anderson, E. N (1987) 'Why is humoral medicine so popular? *Social Science and Medicine*, 25 (4), pp. 331-337

Anderson, J. M (1990) 'Home care management in chronic illness and the self-care movement: an analysis of ideologies and economic processes influencing policy decisions,' *Advances in Nursing Science* 12 (2), pp. 71-83.

Anderson, R. M. (1995) 'Revisiting the Behavioural Model and Access to Medical Care: Does it Matter?' *Journal of Health and Social Behaviour*, 36 (1), pp. 1-10.

Anderson, L. S., D. German, R. & Anderson, R. (1996) 'Using qualitative and quantitative methods to pre-test the publication Take Charge of your Diabetes: a guide for care', *Diabetes Educator,* 22 (6), pp. 598-604.

Anderson, R. M. and Funnel, M. M (2005) 'Patient empowerment: reflections on the challenge of fostering the adoption of a new paradigm,' Patient Education and Counselling, 57 (2), pp. 153-157.

Amin, S. Diamond, I. Bavedm, R & Newby, M. (1997) '*Transition to Adulthood of Female Factory Workers: Some Evidence from Bangladesh*,' New York, Population Council, Policy Research Division.

Arztliche, M. N., (1981) 'Self- medication and medical prescription,' *Praventivmed,* 2511 (2), pp. 36-39.

Ay, P. Hayran, O. Topuzoglu, A. Hidiroglu, S. Coskun, A. Save, D. Nalbant, H. Ozdemir, E. & Eker, L. (2009) 'The influence of gender roles on health seeking behaviour during pregnancy in Turkey,' *The European Journal of Contraception and Reproductive Health Care,'* 14 (4), pp. 290-300.

Ayeni, B. Rushton., G. & McNulty, M. L (1987) 'Improving the geographical accessibility of health care in rural areas: A Nigerian case study', *Social Science & Medicine,* 25 (10), pp. 1083-1094.

Ayisi, R. & Whiting, A. (2004) *'HIV cash for Mozambique,'* Illuminating Voices, PANOS Institute: London.

Baker, C. (1995) 'The development of self-care ability to detect early signs of relapse among individuals who have schizophrenia', *Archives of Psychiatric Nursing,* 9 (5), pp. 261-268.

Ballance, R. Popgany, J. & Forstner, H (1992) *The world's pharmaceutical industries: an international perspective on innovation, competition and policy*. Aldershot: Edward Elgar Publishing.

Bangladesh Health Watch (2008) *Health Workforce in Bangladesh: Who constitutes the healthcare system?* Dhaka: BRAC University Press.

Baqui, A. H. Black, R. Arifeen, S. R. Hill, K. Mitra, S. N. & Sabir, A. A. (1998) 'Causes of childhood deaths in Bangladesh: Results of a nationwide verbal autopsy study,' *Bulletin of the World Health Organisation,* 76 (2), pp. 161-171.

Barofsky, I. (1978) 'Compliance, adherence and therapeutic alliance: Steps in development of self-care', *Social Science & Medicine,* 12 (3), pp. 69-76.

Bates, I. Fenton, C. Gruber, J. Lalloo, D. Medina Lara, A. Squire, S.B. Theobald, S. Thomson, R. and Tolhurst, R. (2004a) 'Vulnerability to malaria, tuberculosis and HIV/AIDS infection and disease. Part 1: determinants operating at individual and household level,' *The Lancet of Infectious Diseases,* 4 (5), pp. 267-277.

Bates, I. Fenton, C. Gruber, J. Lalloo, D. Medina Lara, A. Squire, S.B. Theobald, S. Thomson, R. and Tolhurst, R. (2004b) 'Vulnerability to malaria, tuberculosis and HIV/AIDS infection and disease. Part 2: determinants operating at environmental and institutional level,' *The Lancet of Infectious Diseases*, 4 (6), pp. 368-375.

Baum, F. (1995) 'Researching public health: behind the qualitative - quantitative methodological debate,' *Social Science and Medicine*, 40 (4), pp. 459-468.

BBS (Bangladesh Bureau of Statistics) (2005) *Statistical pocketbook of Bangladesh 2003.* Dhaka: BBS, Planning Division, Ministry of Planning, Government of Bangladesh.

BBS (Bangladesh Bureau of Statistics) (2007) *Statistical pocketbook of Bangladesh 2006.* Dhaka: BBS, Planning Division, Ministry of Planning, Government of Bangladesh.

BBS (Bangladesh Bureau of Statistics) (2009) *Statistical pocketbook of Bangladesh 2008.* Dhaka: BBS, Planning Division, Ministry of Planning, Government of Bangladesh.

Beck, E. (2005) 'The UCSD Student run free clinic project: Transdiciplinary health professional education,' *Journal of Healthcare for the Poor and Underserved*, 16 (2), pp. 207-219.

Becker, G., Gates, J, & Newsom, E. (2004) 'Self-care among chronically ill African Americans: culture, health disparities, and health insurance status,' *American Journal of Public health,* 94 (12), pp. 2066-2073.

Beckerleg, S. Lewando.-Hundt., G. Eddama, M. el Alem, A. Shawa, R. & Abed, Y. (1999) 'Purchasing a quick fix from private pharmacies in the Gaza Strip', *Social Science & Medicine*, 49 (11), pp. 1489-1500.

Begum, S. (1996). Health dimensions of poverty. In. H. Z. Rahman, M. Hossain, and B. Sen, (eds). *Dynamics of rural poverty in Bangladesh: 1987-94*. Dhaka: Bangladesh Institute of Development Studies.

Bell, S.E. (2000) 'Experiencing illness in/and narrative.' In. C.E. Bird, P. Conrad, A.M. Fremont (eds.). *Handbook of Medical Sociology*. Upper Saddle River, NJ: Prentice Hall.

Bell, M. & Franceys, R. (1995) 'Improving human welfare through appropriate technology: Government responsibility, citizen duty or customer choice,' *Social Science and Medicine,* 40 (9), pp. 1169-1179.

Berman, P. (1987) 'Treatment use and expenditure on curative care in rural Indonesia,' *Health Policy and Planning,* 2 (4), pp. 289-300.

Berman, R. and Iris, M (1998) 'Approaches to self-care in late life', *Qualitative Health Research,* 8 (2), pp. 224-236.

Berman, P. Kendall, C. & Bhattacharya, K. (1994) 'The household production of health: integrating social science perspectives on micro level health developments,' *Social Science and Medicine,* 38 (2), pp. 205-215.

BDHDR (Bangladesh Human Development Report) (2001). *Fighting Human Poverty: Bangladesh Human Development Report 2000*, Dhaka: Ministry of Planning, Government of Bangladesh and UNDP.

Bhatia, J. C. Cleland, J. (2001) 'Health-care seeking and expenditure by young Indian mothers in the public and private sectors', *Health Policy and Planning,* 16 (1), pp. 55-61.

Bhattacharya, S. K. (2003) 'Progress in the prevention and control of diarrhoeal diseases since Independence', *National Medical Journal of India,* 16, pp. 15-19.

Bhuyan, K. K. (2004) 'Health promotion through self-care and community participation: Elements of a proposed programme in the developing countries', *BMC Public Health,* 4 (11), pp. 1-12.

Bhuiya, A. Hanifi, S. M. A. & Mahmood, S. S. (2006) Chakaria health and demographic surveillance system: Focussing on the poor and vulnerable. Socioeconomic health and demographic profile 1999-2000. Dhaka: ICDDR,B. Scientific Report No. 94.

Bhuiya, A. Ribaux, C. & Eppler, P. (2002) ‘Community-led primary health care initiatives: Lessons from a project in rural Bangladesh. In. J. R. Wagon (eds). *Community-based Health Care: Lessons from Bangladesh to Boston*, Boston: Management Sciences for Health.

Bhuyia, A. Wojtyniak., B. & Karim, R. (1989) 'Malnutrition and child mortality: are socioeconomic factors important?' *Journal of Biosocial Science*, 21, pp. 357-364.

BIDS (1992) *Rethinking rural poverty: a case for Bangladesh, Dhaka*: Bangladesh Institute of Development Studies.

Bissell, P. Ward, P. R. & Noyce, P. R. (2001) 'The dependent consumer: Reflections on accounts of the risks of non-prescription medicines,' *Health*, 5 (1), pp. 5-30.

Biswas, P, Kabir. Z. N, Nilsson. J. & Zaman, S. (2006) 'Dynamics of health care seeking behaviour of elderly people in rural Bangladesh,' *International Journal of Ageing and Later Life*, 1 (1), pp. 69-89.

Black, R. E. Morris, S. S. & Bryce, J. (2003) 'Where and why are 10 million children dying every year?' *Lancet*, 361, pp. 2226-2234.

Blackburn, J. (2000) 'Understanding Paulo Freire: reflections on the origins, concepts, and possible pitfalls of his educational approach,' *Community Development Journal*, 35 (1), pp. 3-15.

Blaxter, M. (2004) *Health*, Polity Press: Cambridge.

Bloom, G. & Xingyuan, G. (1997) 'Health sector reform: lessons from China,' *Social Science and Medicine*, 45 (3), pp. 351-360.

Bloom, G. & Lucas, H. (1999) 'Health and Poverty in Sub-Saharan Africa.' *IDS working Paper*, 103.

Blum, L. S. & Nahar, N. (2004) 'Cultural and social context of dysentery: Implications for the introduction of a new vaccine,' *Journal of Health Population and Nutrition*, 22 (2), pp. 159-169.

Bojalil, R. & Calva, J. J. (1994) 'Antibiotic misuse in diarrhoea: A household survey in a Mexican community', *Journal of Clinical Epidemiology*, 47 (2), pp. 147–156.

Bolaria, B. S. (1979) 'Self-care and lifestyles; ideological and policy implications,' In. J. A. Fry (ed). *Economy, Class and Social Reality*, Toronto: Butterworths.

Borooah, V. K. (2004) 'On the incidence of diarrhoea among young Indian children', *Economics & Human Biology*, 2 (1), pp. 119-138.

Bosch, A. (2005) '*Adolescents' reproductive health in rural Bangladesh: the impact of early childhood nutritional anthropometry*,' Unpublished PhD Thesis: University of Amsterdam.

Boulton, D. & Hammersley, M. (1996) 'Analysis of Unstructured Data', in R. Sapford and V. Judd (eds). *Data Collection and Analysis*. London: Sage.

Bouma, G.D. (2000). *The Research Process*. Oxford: Oxford University Press.

BRAC. (2004). *BRAC Annual Health Report 2003*. BRAC Centre. Dhaka: Bangladesh.

Bradley, C. P. Riaz, A. Tobias, R. S. Kenkre, J. E. & Dassu, D. Y. (1998) 'Patient attitudes to over-the-counter drugs and possible professional responses to self-medication,' *Family Practice*, 15 (1), pp. 44-50.

Braveman, P. & Gruskin, S. (2003) 'Poverty, equity, human rights and health', *Bulletin of the World Health Organisation*, 81 (7), pp. 539-545.

Brewer, J. & Hunter, A. (1989) *Multimethod research: A synthesis of styles*. California: Sage.

Brewer, J. D. (2000). *Ethnography*. Buckingham: Open University Press.

Brown, N. Boutlon, M. Lewis, G. & Webster, A. (2004) Social science research ethics in developing countries and contexts, *Working Paper - ESRC Research Ethics Framework: Discussion Paper 3* Available at: www.york.ac.uk/res/ref/documents.htm.

Bryman, A. (2001) *Social Research Methods.* Oxford: Oxford University Press.

Bunker, J. B. (2001) 'The role of medical care in contributing to health improvements within societies,' *International Journal of Epidemiology*, 30 (6), pp. 1260-1263.

Burgess, R. G. (1991) *In the Field: An Introduction to Field Research*. London: Routledge.

Buttenheim, A. (2006) '*Flood exposure and child health in Bangladesh*,' Californian Centre for Population Research and UCLA School of Public Health.

Bury, M. (2001) 'Illness narratives: fact or fiction?' *Sociology of Health and Illness*, 23 (3), pp. 263-85.

Byron, R. K. (2004) 'Poor health service leads patients to quacks,' *The Daily Star*. 24 October 2004 Vol. 273. pp. 1 & 11.

Caldwell, J. C. Caldwell, P. Caldwell, B. K. & Pieris, I. (1998) 'The Construction of Adolescence in a Changing World,' *Studies in Family Planning*, 29 (2), pp. 137-153.

Calnan, M. (1987) *Health and Illness: the lay perspective*, London: Tavistock.

Calnan, M. (2007) 'Quantitative survey methods in health research,' In. M. Saks & J. Allsop. (eds). *Researching health, qualitative, quantitative and mixed methods.* London: Sage.

Carrin, G. Ron, A. Hui, Y. Hong, W. Tuohong, Z. Licheng, Z. Shuo, Z. Yide, Y. Jiaying, C. Qicheng, J. Zhaoyang, Z. Jun, Y. & Xuescheng, L. (1999) 'The reform of the rural cooperative medical system in the People's Republic of China: interim experience in 14 pilot counties,' *Social Science and Medicine*, 48 (7), pp. 961-972.

CFPR/TUP. (2004) 'Stories of targeting: process documentation of selecting the ultra poor for CFPR/TUP programme. Dhaka and Ottawa: BRAC and Aga Khan Foundation Canada. *CFPR/TUP Working Paper Series,* No. 1, pp. 1-34.

Chambers, R. (1989) 'Vulnerability, coping and policy', *IDS Bulletin,* 20 (2), pp. 1-7.

Chambers, R. (2006) 'The role of the health professional in supporting self care,' *Quality in Primary Care* 14 (3), pp. 129–131.

Chang, F. & Trivedi, P. K. (2003) 'Economics of self-medication: theory and evidence', *Health Economics,* 12 (9), pp. 721-739.

Chapple, A. and Rogers, A (1999) 'Self-care and its relevance to developing demand management strategies: a review of qualitative research', *Health and Social Care in the Community,* 7 (6), pp. 445-454.

Chaudhury, N & Hammer, J. S. (2003) *Ghost Doctors: Absenteeism in Bangladeshi Health Facilities,* World Bank Policy Research Working Paper No. 3065. World Bank: Washington.

Chaudhury, R. R. (2001) 'A clinical protocol for the study of traditional medicine and human immunodeficiency virus related illness,' *Journal of Alternative Complementary Medicine,* 7 (5), pp. 553-566.

Chima, R. I. Goodman, C. A. & Mills, A. (2003) 'The economic impact of malaria in Africa: a critical review of the evidence,' *Health Policy,* 63 (1), pp. 17-36.

Chowdhury, A. M. & Cash, R. (1983) 'Cultural incorporation of the ORT message,' *The Lancet,* 34, pp. 1591-1596.

Chowdhury, A. M. Vaughan, J. P. & Abed, F. H. (1988) 'Use and safety of home-made oral rehydration solutions: an epidemiological evaluation from Bangladesh,' *International Journal of Epidemiology*, 17 (3), pp. 655-665.

Chowdhury, A. K. A. Mannan, M. A. Khan, M. O. F. & Rahman, F. (1997) 'Antibacterial activity of Pergularia daemia,' *Bangladesh Journal of Life Sciences,* 8, pp. 71.

Chowdhury, A. M. R. (2002) 'The impact of development interventions on health in Bangladesh', in J. W. Rhode. (ed.) *Community based health care: lessons from Bangladesh to Boston.* Boston: Management Science for Health.

Christakis, N. A. Ware, N. C. & Kleinman, A. (1994) 'Illness behaviour and the health transition in the developing world,' In. C. Chen, A. Kleinman, & N. C. Ware (eds). *Health and social change in international perspective*, Boston: Harvard University Press.

Clark, J.A. & Mishler, E. G. (1992) 'Attending to patients' stories: Reframing the clinical task,' *Sociology of Health and Illness* 14 (3), pp. 344-370.

Clark, N. (2003) 'Management of chronic disease by patients,' *Annual Review of Public Health,'* 24 (1), pp. 289-313.

Clasen, T. Roberts, I. Rabie, T. Schmidt, W. & Cairncross, S. (2006) 'Interventions to improve water quality for preventing diarrhoea,' *Cochrane Database of Systematic Reviews*, Issue 3. Oxford: Update Software.

Cockcroft, A. Milne, D and Anderson, N. (2004) *The third service delivery survey 2003: Final Report.* Dhaka: CIET Canada and the Ministry of Health and Family Welfare, Government of Bangladesh.

Cockcroft, A. Anderson, Milne, D. Hossain, M. & Karim, E. (2007) 'What did the public think of health services reform in Bangladesh? Three national based community surveys 1999-2003, *Health Research Policy Systems* 5 (1). Available at: http://www.health-policy-systems.com/content/5/1/1

Coffey, A. & Atkinson, P. (1996) *Making sense of qualitative data: Complementary research strategies*. London: Sage.

Collins, A. (1998) *Environment, Health and Population Displacement: development and Change in Mozambique's Diarrhoeal Disease Ecology.* Aldershot: Ashgate.

Collins, A. E. (2002) 'Health ecology and environmental health management in Mozambique', Special Issue: *Southern African Perspectives on Health Geography. Health and Place*, 8 (4), pp. 263-72.

Collins, A. E. Lucas, M. E. Islam, M. S. & Williams, L. E. (2006) 'Socio-economic and environmental origins of cholera epidemics in Mozambique: guidelines for tackling

uncertainty in infectious disease prevention and control,' *International Journal of Environmental Studies,* 63 (5), pp. 537-549.

Collins, A. E. (2009) *Disaster and Development,* London: Routledge.

Comley, A. L. (1994) 'A comparative analysis of Orem's self-care model and Peplau's interpersonal theory', *Journal of Advanced Nursing,* 20 (4), pp. 755-760.

Connelly, M. A. Gayer, M. Ryan, M. J. Salama, P. Spiegel, P. & Heymann, D. L. (2004) 'Communicable diseases in complex emergencies: impact and challenges,' *The Lancet*. Vol. 364. pp. 1974-1983.

Corbett, J. (1988) 'Famine and household coping strategies,' *World Development,* 16 (9), pp. 1099-1112.

Cote-Arsenault, D. & Morrisson-Beedy, D, (1999) 'Practical advice for planning and conducting focus groups,' *Nursing Research,* 48 (7), pp. 280-283.

Crawford, R. (1977) 'You are dangerous to your health: the ideology and politics of victim blaming,' *International Journal of Health Services,* 7 (4), pp. 663-680.

Creswell, J. W. & Plano Clark, V. L. (2007) *Designing and conducting mixed methods research*. London: Sage.

Crotty, M. (1998) *The foundations of social research: meaning and perspective in the research process,* London: Sage.

Cunningham-Burley, S. & Irvine, I. (1987) "And have you done anything so far?" An examination of lay treatment of children's symptoms,' *British Medical Journal,* 295, pp. 700-702.

Currat, L. (2002) Health research, health development, poverty and global security, *Global forum for Health Research: The 10/90 Report on Health Research 2001-2002,* Geneva, World Health Organisation.

Curtis, V. & Cairncross, S. (2003) 'Effect of washing hands with soap on diarrhoea risk in the community: a systematic review,' *The Lancet Infectious Diseases,* 3 (5), pp. 275-281.

Curtis, V. Cairncross, S. & Yonli, R. (2000) 'Review: Domestic hygiene and diarrhoea - Pinpointing the problem,' *Tropical Medicine and International Health,* 5 (1), pp. 22-32.

Daniels, N. Simons, S. Rodrigues, A. Gunnlaugsson, G. Forster, T. Wells, J. Hutwagner, L. Tauxe, R. & Mintz, E. (1999) ' First do no harm: making oral rehydration solution safer in a cholera epidemic,' *America Journal of Tropical Medicine and Hygiene,* 60 (6), pp. 1051-1055.

Damme, W. V. Diesfield, H. Green, A. Koivusalo, M. Nitayarumphong, S. & Tomson, G. (2004) *North South partnership for health systems research: 20 years of experience of European Commission support. Summary version.* Brussels: European Commission Office.

Darlington, Y. & Scott, D. (2002) F*ocus groups: a practical guide for applied research.* London: Thousand Oaks.

Davies, S. (1993) 'Are coping strategies a cop out?' *IDS Bulletin,* 24 (4), pp. 60-72.

Davies, S. (1996) *Adaptable livelihoods: coping with food security in the Malian Sahel*. Basingstoke: Macmillan Press.

Davies, K. (2006) ' What is effective intervention? - using theories of health promotion,' *British Journal of Nursing,* 15 (5), pp. 252-256.

Davison, C. Frankel, S. & Davey Smith, G. (1992) 'The limits of lifestyle: reassessing 'fatalism' in the popular culture of illness prevention,' *Social Science and Medicine,* 34 (6), pp. 675-685.

Dean, K. (1981) 'Self-Care Responses to Illness - a Selected Review,' *Social Science & Medicine Part a-Medical Sociology,* 15 (5), pp. 673-687.

Dean, K. Holst, E. & Wagner, M. G. (1983) 'Self-care of common illness in Denmark', *Medical Care,* 21 (3), pp. 1012-1032.

Dean, K. (1986) 'Self-care behaviour: Implications for aging', in Dean, K. H., T. & Holstein, B. E (eds). *Self-care and health in old age: implications for policy and practice.* London: Croom Helmer.

Dean, K. (1988) Methodological issues in the study of health-related behaviour. In R. Anderson, J. Davies, I. Kickbush, D. McQueen, & J. Turner. (eds). *Health Behaviour Research and Health Promotion*, Oxford: Oxford University Press.

Dean, K. (1989a) 'Conceptual, Theoretical and Methodological Issues in Self-Care Research,' *Social Science & Medicine,* 29 (2), pp. 117-123.

Dean, K. (1989b) 'Self-Care component and lifestyles: The importance of gender, attitudes and social situation,' *Social Science & Medicine,* 29 (2), pp. 137-152.

Dean, K, (1992) 'Health related behaviour: concepts and methods,' In. M. G. Ory, R. P. Abeles, & P. D. Lipman. (eds). *Aging, Health and Behaviour*, London: Sage.

Dean, K. & Kickbush, I (1995) 'Health related behaviour in health promotion: utilising the concept of self-care', *Health Promotion International,* 10 (1), pp. 35-40.

DeFriese, G. W. A. Guild, P. Steckler, A. & Konrad, T. (1989) 'From activated patient to pacified activist: a study on the self-care movement in the United States', *Social Science & Medicine,* 29 (2), pp. 195-204.

Denscombe, M. (2003) *The good research guide: for small-scale social research projects*. Maidenhead: Open University Press.

Denzin, N. (1989) *The research act: A theoretical introduction to sociological methods.* New York: McGraw-Hill.

Denzin, N. K. & Lincoln, Y. S. (1998) *Strategies of qualitative enquiry*. California: Sage.

Department of Health (2001) *The expert patient: A new approach to chronic disease management for the 21st Century,* London: Department of Health.

Department of Health (2005) *'Self-care - a real choice,'* London: Department of Health.

Devereux, S. & Hoddinott, J. (1992) *Fieldwork in Developing Countries,* London: Lynne Rienner Publishers.

Devereux, S. (1993) 'Goats before ploughs: dilemmas of household response to sequencing during food shortages,' *IDS Bulletin,* 29 (2), pp. 117-123.

DfID (2000) *Better health for poor people: Consultation document on strategies for achieving the international development targets.* London: DfID.

DfID (2003) *Health, environment and the burden of disease: a concept note.* London: DfID.

DfID (2006) *Reducing the risk of disasters - Helping to achieve sustainable poverty reduction in a vulnerable world.* DfID Policy Paper. London: DfID.

DFID-Bangladesh. (2002) A review of DFID's country strategy for Bangladesh: CSP 1998-2002. Dhaka: DFID.

Dill, A. Brown, P. Ciambrone, D. & Rakowski, W. (1995) 'The meaning and practice of self-care by older adults. A qualitative study,' *Research on Aging,* 17 (1), pp. 8-41.

Donaldson, L. (2003) 'Expert patients usher in a new era of opportunity for the NHS,' *British Journal of Medicine,* 326 (7402), pp. 1279-1280.

Easton, K. L. (1993) 'Defining the concept of self-care,' *Rehabilitation Nursing,* 18 (6), pp. 384-387

Edgeworth, R. & Collins, A. E. (2006) 'Self-care as a response to diarrhoea in rural Bangladesh: Empowered choice or enforced adoption?' *Social Science & Medicine,* 63 (10), pp. 2686-2697.

EHP, UNICEF & WSP (2004) *The Hygiene Improvement framework: A comprehensive Approach for preventing Childhood Diarrhea.* [Online]. Available at: http://www.ehproject.org/PDF/Joint_Publications/JP008-HIF.pdf.

Elliot-Binns, C. P. (1973) 'An analysis of lay medicine', *Journal of the Royal College of General Practitioners*, 23, pp. 255-264.

Emch, M. (1999) 'Diarrheal disease risk in Matlab, Bangladesh', *Social Science & Medicine,* 49 (4), pp. 519-530.

Ensor, T. Dave-Sen, P. Ali, L. Hossain, A. Begum, S. A. & Moral, H. (2002) 'Do essential service packages benefit the poor? Preliminary evidence from Bangladesh,' *Health Policy and Planning* 17 (3), pp. 247-256.

Ensor, T. & Cooper, S. (2004) 'Overcoming barriers to health service access: influencing the demand side,' *Health Policy and Planning,* 19 (2), pp. 69-79.

Erlandson, D. A, Harris, E. L. Skipper, B. L. & Allen, S. D. (1993). *Doing naturalistic inquiry: a guide to methods*. London: Sage.

Erwin, J. Britten, N. & Jones, R. (1996) 'General practitioners' views on over the counter sales by community pharmacists,' *British Medical Journal,* 312 (7031), pp. 617-618.

Esrek, M. Turner. J. A. McCurry, S. M. Gibbons, L. & Kraybill, B. M. (2003) 'Efficacy of a self-management group intervention for elderly persons with chronic back pain,' *Clinical Journal of Pain,* 19 (3), pp. 156-167.

Etkin, N. (1992) 'Side effects: cultural construction and reinterpretation of Western pharmaceuticals,' *Medical Anthropology Quarterly,* 6 (2), pp. 99-113.

Fabricant, S. J. & Hirschhorn, N. (1987) 'Deranged distribution, perverse prescription, unprotected use: the irrationality of pharmaceuticals in the developing world,' *Health Policy and Planning,* 2 (3), pp. 204-213.

Fabricant, S. J. Kamara, C. W. & Mills, A. (1999) '*Why* the poor pay more: Household curative expenditures in rural Sierra Leone ,' *International Journal of Health Planning and Management,* 14 (3), pp. 179-199.

Fahey, J. W. (2005) 'Moringa oleifera: A review of the Medicinal Evidence for Its Nutritional, Therapeutic and Prophylactic Properties, Part 1. *Trees for Life Journal,* 1 (5), pp. 12-18.

Faisant, N. Gallant, D. J. Bouchet, B. & Champ, M. (1995) 'Banana starch breakdown in the human small intestine studied by electron microscopy,' *European Journal of Clinical Nutrition,* 49 (2), pp. 98–104.

Falkingham, J. (2004) 'Poverty, out-of-pocket payments and access to health care: evidence from Tajikistan,' *Social Science and Medicine,* 58 (2), pp. 247-258.

Farmer, P. (2001) *Infections and Inequalities* California: California University Press.

Farmer, P. (2005) Pathologies of Power, California: California University Press.

Farrar, W. E. (1985) 'Antibiotic resistance in developing countries,' *The Journal of Infectious Diseases,* 152 (6), pp. 1103-1106.

Faulkner, M. (1996) 'Family responses to children with diabetes and their influence on self-care,' *Journal of Paediatric Nursing,* 11 (2), pp. 82-93.

Ferguson, A. (1988) 'Commercial pharmaceutical medicine and medicalisation: a case study from El Salvador', in Van der Geest, S. W. S. (ed). *The contest of medicines in developing countries.* London: Kluwer Academic Publishers.

Ferguson, T. (1992) 'Patient, heal thyself: Health in the Information Age', *The Futurist,* 26 (1), pp. 9-13.

Few, R. Ahern, M. Matthies, F. & Kovats, S. (2004) *'Floods, health and climate change: A strategic review,'* Tyndall Centre for Climate Change Research Working Paper 63.

Fewtrell, L. Kaufmann. R. B. Kay, D. Enanoria, W. Haller, L. & Colford, J. M. Jr. (2005) 'Water, sanitation, and hygiene interventions to reduce diarrhoea in less developed countries: a systematic review and meta-analysis,' *Lancet of Infectious Disease*, 5 (1), pp. 42-52.

Field, K. S. & Briggs, D. J. (2001) 'Socio-economic and locational determinants of accessibility and utilisation of primary health care,' *Health and Social Care in the Community*, 9 (5), pp. 294-308.

Fleming, G. V. Giachello, A. L. Anderson, R. M. & Andrade, P. (1984) 'Self-care substitute, supplement or stimulus for formal medical services?' *Medical Care*, 22 (10), pp. 950-966.

Ford Foundation (2003) *Women's health research manual*. Granted through the department of international health. Johns Hopkins School of Hygiene and Public Health. www.unu.edu.inupress/F002/UIN01E/uin0Ie)I.htm.

Foster, S. (1995) 'Treatment of malaria outside the formal health services,' *Journal of Tropical medicine and Hygiene,'* 98 (1), pp. 29-34.

Freer, C. B. (1980) 'Self-Care; a health diary study', *Medical Care*, 18 (8), pp. 853-861.

Freire, P. (2000) *Pedagogy of the Oppressed*, New York: Seabury Press.

Frid, I. Ohlen, J. & Bergbom, I. (2000) 'On the use of illness narratives in nursing research,' *Journal of Advanced Nursing*, 32 (3), pp. 695-703.

Fries, J. F. Carey, C. & McShane, D. J. (1997) 'Patient education in arthritis: Randomized control trial of a mail-delivered programme,' *Journal of Rheumatology*, 24 (7), pp. 1378-1383.

Fries, J. F. Everett Koop, C. Sokolov, J. Beaddle, C. E. & Wright, D. (1998) 'Beyond health promotion: reducing need and demand for medical care,' *Health Affairs 17 (2), pp. 70-84.*

Fuglie, L. J. (1999) 'The Miracle Tree: *Moringa oleifera*: Natural Nutrition for the Tropics.' Church World Service, Dakar.

Gantz, S. B. (1990) 'Self-care: Perspectives from six disciplines,' *Holistic Nursing Practice,* 4 (2), pp. 1-12.

Geissler, P. W. Nokes. K. Prince, R. J. Achieng, R. O. Aagaard-Hansen, J. & Ouma, J. H. (2000) 'Children and medicines: self-treatment of common illnesses among Luo schoolchildren in western Kenya,' *Social Science & Medicine,* 50 (12), pp. 1771-1783.

Gerlin, A (2006) 'A simple solution' *Time Magazine*, New York.

Giang, K. B. & Allebeck, P. (2003) 'Self-reported illness and the use of health services in a rural district of Vietnam: findings from an epidemiological field laboratory,' *Scandinavian Journal of Public Health*, 31 (1), pp. 52-58.

Gibson, P. G. Ram, F. S. F. & Powell, H. (2003) 'Asthma Education' *Respiratory Medication*, 97 (9), pp. 1036-1044.

Gilbert, N. (1995) *Researching social life*. London: Sage Publications

GOB. (1998) *Project Implementation Plan. Health and Population Sector Programme.* Dhaka: Government of Bangladesh.

Goel, P. Ross.-Degnan., D. Berman, P. & Soumerai, S. (1996) 'Retail pharmacists in developing countries: a behaviour and intervention framework,' *Social Science & Medicine,* 42 (8), pp. 1155-1161.

Goicoechea, J. (1996) Primary health care reforms. Fifth forum on primary health care development in southern Europe and its relevance to countries of central and eastern Europe-the way forward. WHO Regional office for Europe. Copenhagen.

Goudge, J. & Govender, V. (2000) A review of experience concerning household ability to cope with the resource demands of ill health and health care utilisation. EQUINET Policy Series. No. 3. Centre for Health Policy: University of Cape Town.

Gray, L. (2002) 'The effect of drought and economic decline on rural women in western Sudan,' *Geography Review,* 24 (1), pp. 89-98.

Green, K. E. (1985) 'Identification of the facets of self-health management', *Evaluation and the Health professions,* 8 (3), pp. 323-338.

Green, C. E. (1986) 'Diarrhoea and the social marketing of oral rehydration salts in Bangladesh,' *Social Science & Medicine,* 23 (4), pp. 357-366.

Green, A. (2004) 'Have health sector reforms strengthened PHC in developing Countries?' *Primary Health Care Research and Development,* 5 (4), pp. 289–295.

Green, J. & Thorogood, N. (2004) *Qualitative methods for health research*. London: Sage.

Greene, J. C. Kreider, H. & Mayer, E. (2005) Combining qualitative and quantitative methods in social inquiry. In. B. Somekh. & C. Lewin. (eds). *Research methods in the social sciences*. New Delhi: Vistaar Publications

Greenhalgh, T. (1987) 'Drug prescription and self-medication in India: an exploratory survey,' *Social Science & Medicine,* 25 (3), pp. 307-18.

Guerrant, R. Kosek, M. Moore, S. R. Lorntz, B. Brantley, R. & Lima, A. (2002) 'Magnitude and impact of diarrheal diseases.' *Archives of Medical Research,* 33 (4), pp. 351-355.

Guba, E. G. & Lincoln, Y. S. (2005) 'Paradigmatic controversies, contradictions, and emerging influences' In N. K. Denzin & Y. S. Lincoln (eds). *The Sage Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.

Gubrium, J. F. & Sankar, A. (1994) *Qualitative methods in Ageing Research*. London: Sage.

Guyon, A. Barman, A. Ahmed, J & Alam, M. (1994) 'A baseline survey on the use of drugs at the primary health care level in Bangladesh,' *Bulletin of the World Health Organisation,* 72 (2), pp. 265-71.

Gwatkin, D. R. Guilot, M. & Heuveline, P. (1999) 'The burden of disease among the global poor,' *The Lancet,* 354 (9178), pp. 586-589.

Gwatkin, D. R. Rustein, S. Johnson, K. Pande, R. P. & Wagstaff. A. (2000) '*Socioeconomic differences in health, population and nutrition in Bangladesh,* Washington D.C: HNP/Poverty Thematic Group. World Bank.

Gwatkin, D. R. (2005) 'How much would poor people gain from faster progress towards the millennium development goals for health?' *Lancet*, 365 (9461), pp. 813-817.

Hadi, A. (2003) ' Management of acute respiratory infections by community health volunteers: experience of Bangladesh Rural Advancement Committee (BRAC),' *Bulletin of the World Health Organisation*, 81 (3), pp. 183-189.

Hall, J. J. & Taylor, R. (2003) 'Health for all beyond 2000: the demise of the Alma-Ata declaration and primary health care in developing countries,' *MJA,* 178 (1), pp. 17-20.

Hamel, M. J. Odhacha, A. Roberts, J. M. & Deming, M. S (2001) 'Malaria control in Bungoma District, Kenya: a survey of home treatment of children with fever, bednet use and attendance at antenatal clinics,' *Bulletin of the World Health Organisation,* 79 (11), pp. 1014-1023.

Hanifi, S. M. A. Hoque, S. Moula, A. & Aziz, R. R. (2009) 'Study area and the population,' In Bhuiya, A. (ed). *Health for the Rural Masses: Insights from Chakaria*. Dhaka: ICDDR,B.

Hannay, D. R. (1979) *The Symptom Iceberg: a study of community health*. London: Routledge and Keegan Paul.

Hardon, A. B. P. Streefland, P. LimTan, M. Hongvivatana, T. van der Staa, A. & Varkevisser, C. (1994) *Applied health research: anthropology of health and health care*. Amsterdam: Het Spinhuis Publishers.

Hardon, A. P. (1987) 'The use of modern pharmaceuticals in a Filipino village: doctors' prescription and self medication,' *Social Science and Medicine,* 25 (3), pp. 277-92

Hardon, A. P. (1994) 'People's understanding of efficacy for cough and cold medicines in Manila, the Philippines', In N. L. Etkin & M. L. Tan. (eds). *Medicines: Meaning and Contexts.* Amsterdam: Action Health Information Networks.

Hart, C. A. & Kariuki, S. (1998) 'Antibiotic resistance in developing countries,' *British Medical Journal*, 317, pp. 647-650.

Hart, J. T (2004) 'Inverse and positive care laws,' *British Journal of General Practise*, 54 (509), pp. 890.

Hashemi, S. M. Schuler, S. R. & Riley, A. P. (1996) 'Rural credit programmes and women's empowerment in Bangladesh,' *World Development*, 24 (4), pp. 635-653.

Haug, M. R. Wister. M. L. & Namazi, K. H. (1989) 'Self-Care among older adults', *Social Science & Medicine*, 29 (2), pp. 171-183.

Hausmann-Muela, S. Ribera, J. M. & Nyamongo, I. (2003) 'Health-seeking behaviour and the health system response,' DCPP Working paper 14. London School of Tropical Medicine and Hygiene: London.

Health Canada. (2004) *Supporting self-care: The contribution of Nurses and Physicians.* [Online]. Available at: http://www.hc-sc.gc.ca/hcs-sss/pubs/hhrhs/1997-self-auto-contribut/literature_e.html.

Health Security Project (2009) Health security for disaster resilience project document, Northumbria University: Disaster and Development Centre and International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B).

Healthwise (2000) *Healthwise success stories.* South Carolina: The Partners Health Initiative.

HelpAge International (2000) *Uncertainty rules over lives: The situation of older people in Bangladesh.* London: HelpAge International.

Helman, C. G. (2007) *Culture Health and Illness*, London: Hodder Arnold.

Henn, M. Weinstein, N. & Foard, N. (2006) *A short introduction to social research*. New Delhi: Vistaar Publications.

Hennesy, C. H. (1989) 'Culture in the use, care, and control of the aging body,' *Journal of Aging Studies*, 3 (1), pp. 39-54.

Hertz, R. (1997) *Reflexivity and voice.* London: Sage.

Heyman, R. (1994) *Multivariate Methods*. Newcastle: University of Northumbria.

Hickey, T. Dean. K. & Holstein, B. (1986) 'Emerging trends in gerontology and geriatrics: Implications for the self-care of the elderly,' *Social Science & Medicine,* 23 (12), pp. 1363-1369.

Hill, A. MacLeod, W. Joof, D. Gomez, P. & Walraven, G. (2000) 'Decline of mortality in children in rural Gambia: the influence of village level primary health care,' *Tropical Medicine and International Health,* 5 (2), pp. 107-118.

Hirschhorn, N. & Greenough, W. B. (1991) 'Progress in oral rehydration therapy,' *Scientific American,* 264 (5), pp. 16-22

Hogvivatana, T. (1987) 'Self-Care: Emerging research challenge for primary health care in developing countries. South-East Asia advisory committee on health research. Mongolia. WHO.

Hoinville, G. & Jowell, R. (1989) *Survey Research Practice.* Aldershot: Gower.

Holloway, I. & Todres, L. (2005) The status of method: flexibility consistency and coherence. In I. Holloway. (ed). *Qualitative research in health care*. Berkshire: Open University Press.

Hoque, B. A. Sack, R. B. Siddiqi, M. Jahangir, A. M. Hazera, M. & Nahid, A. (1993) 'Environmental health and the 1991 Bangladesh cyclone,' *Disasters,* 17 (2), pp. 143-153.

Hossain, M. M. Glass, R. I. & Khan, M. R. (1982) 'Antibiotic use in a rural community in Bangladesh,' *International Journal of Epidemiology*, 11 (4), pp. 402-405.

Hossain, B. & Begum, K. (1998) 'Survey of the existing health workforce of Ministry of Health, Bangladesh,' *Human Resources Development Journal,* 2 (2), pp. 109-116.

Hossain, M. A. & Ahmed, S. M. (2006) 'Pilot project on capacity development of the unqualified/semi qualified allopathic healthcare providers,' BRAC Research Report. BRAC: Dhaka.

Howlander, A. A. & Bhuiyan, M. U. (1999) 'Mothers' health seeking behaviour and infant and child mortality in Bangladesh', *Asia-Pacific Population Journal,* 14 (1), pp. 59-75.

Hoy, B. Wagner, L. Hall, E. (2007) 'Self-care as a health resource of elders: an integrative review of the concept,' *Scandinavian Journal of Caring Sciences*, 21 (4), pp. 456-466.

Hughes, C. M. McElnay, J. C. & Fleming, G. F. (2001) 'Benefits and risks of self-medication,' *Drug Safety*, 24 (14), pp. 1027-1037.

Hulme, D. & Edwards, M. (eds). (1997) *NGOs, states and donors: too close for comfort*. Basingstoke: Macmillan Press.

Hulme, D. (2003) 'Thinking 'Small' and the Understanding of Poverty: Maymana and Mofizul's Story', *Institute for Development Policy and Management University of Manchester United Kingdom,* Working Paper No. 22, pp. 1-21.

Huq, N. & Khan, M. R. (1991) '*Menstruation: beliefs and practices amongst adolescent girls,'* Dhaka, Bangladesh: BRAC, Research and Evaluation Division.

Hussain, T. M. & Smith, J. F. (1999) 'The relationship between maternal work and other socio-economic factors and child health in Bangladesh,' *Public Health,* 113 (6), pp. 299-302.

Hutton, G. & Haller, L. (2004) *Evaluation of the costs and benefits of water and sanitation improvements at the global level.* Geneva: World Health Organisation.

Hydén, L.C. (1997) 'Illness and narrative' *Sociology of Health & Illness* 19 (1), pp. 48-69.

Hyma, B. & Ramesh, A. (1994) 'Traditional medicine: Its extent and potential for incorporation into modern national health systems,' In D. R. Phillips & Y. Verhasselt. (eds). *Health and Development*, London: Routledge.

ICDDR,B (2007). Use of household income and consumption data as a measure of poverty in rural Bangladesh. Scientific Report No. 99. April 2007. Dhaka: Centre for Health and Population Studies.

IFRC (2009) *World Disasters Report - Focus on early warning, early action,* Geneva: IFRC.

Illich, I. (1995) *Limits to medicine. Medical nemesis: The exploration of health*. London: Marion Boyars.

Iqbal, M. Hanifi, S. M. A. Hoque, A. & Bhuiya, A. (2008) *Informal healthcare providers in rural Bangladesh,* Future Health Systems Research Brief, Issue 1. ICDDR, B: Dhaka.

ISDR. (2002) *Living with risk: A global review of disaster risk reduction initiatives*. Geneva: ISDR.

Islam, M. A. Rahman, M. M. & Mahalanabis, D. (1994) 'Maternal and socioeconomic factors and the risk of severe malnutrition in a child: a case control study,' *European Journal of Clinical Nutrition,* 48 (6), pp. 416-424.

Islam, M. S. Mahmud, Z. H. Uddin, M. H. Yunus, M. Luby, S. P. Nair, G. B. & Sack, D. A. (2007). 'Reduction of diarrhoeal diseases using Siraj mixture as point-of-use water treatment strategy in Bangladesh,' 11th ASCON, ICDDR,B, Dhaka.

Islam, S. M. (2006) 'A review on the policy and practices of therapeutic drug use in Bangladesh,' *Calicut Medical Journal,* 4 (4), pp. 1-6.

Jahan, R. A. (2000) 'Promoting health literacy: a case study in the prevention of diarrhoeal disease in Bangladesh,' *Health Promotion International,* 15 (4), pp. 285-291.

Jahan, R. (2001) *Bangladesh: promise and performance,* London: Zed Books.

Janosky, J. E. Leininger, S. L. Hoerger, M. P. & Libkuman, T. M. (2009) *Single Subject Designs in Biomedicine,* Springer Netherlands: Amsterdam.

Jansen, E. G. (1999) *Rural Bangladesh: competition for scarce resources*. Dhaka: University Press Limited.

Jirovec, M. M., & Kanso, J., (1990) 'Self-care agency as a function of patient-environment factors among nursing home residents,' *Research in Nursing and Health,* 13, pp. 303-309.

Johnson, J. E., (1996) 'Social support and physical health in the rural elderly,' *Applied Nursing Research,* 9, pp. 61-66.

Kabeer, N. & Mahmud. S. (2004) 'Globalization, gender and poverty: Bangladesh women workers in export and local markets', *Journal of International Development,* 16 (1), pp. 93-109.

Kabir, M. A. Rahman, A. Salway, S. & Pryer, J (2000) 'Sickness among urban poor: A barrier to livelihood security', *Journal of International Development,* 12 (5), pp. 707-722.

Kabir, Z.N. Tishelman. C. Aguero-Torres. H. Chowdhury. A. M. R. Winblad. B. & Hojer. B. (2003) 'Gender and rural-urban differences in reported health status by older people in Bangladesh,' *Archives of Gerontology and Geriatrics,* 37 (1), pp. 77-91.

Kamat, V. R. & Nichter, M. (1998) 'Pharmacies, self-medication and pharmaceutical marketing in Bombay, India,' *Social Science & Medicine,* 47 (6), pp. 779-794.

Karim, F. Mahmud, S. Ali, A. Islam, N & Chowdhury, A. M. R. (2003) 'Targeting the bottom fifty percent: Is it a better approach to promote health service utilisation among the poor?' *BRAC Health Studies*, 14 (21), pp. 331-361.

Katz, A. & Levin, L. (1980) 'Self-care is not a solipsistic trap: a reply to critics,' *International Journal of Health Services*, 10 (2), pp. 329.

Kelly, J. M. Osamba, B. Garg, R. M. Hamel, M. J. Lewis, J. J. Rowe, S. Y. Rowe, A. K. & Deming, M. S. (2001) 'Community health worker performance in the management of multiple childhood illnesses: Siaya district Kenya 1997-2001,' *American Journal of Public Health,* 91 (10), pp. 1617-1624.

Khan, A. Q. (2001) 'Health services in Bangladesh: development and structural reforms,' In. I. Quadeer, K. Sen & K. R. Nayar. (eds). *Public health and the poverty of reforms: The South Asian predicament*. London: Sage Publications.

Khatun, H. (2003) 'Livelihood strategies in disaster risk reduction in Bangladesh', in P. Sahni. & M. M. Ariyabandu. (eds). *Disaster risk reduction in South Asia.* New Dehli: Prentice Hall.

Khe, N. D. Toan, N. V. Xuan, L. T. T. Erikson, B. Hojer, B. & Diwan, V. K. (2002) 'Primary health care revisited: where do people seek health care in rural areas of Vietnam?' *Health Policy,* 61 (1), pp. 95-109.

Kholer-Reismann, C. (2002) *Illness narratives; Positioned Identities*. Invited annual lecture. Health communication research centre, Cardiff University, Wales, UK. Available at: www.cf.ac.uk/encap/hcrc/cornet/prog/narratives.pdf.

Kickbush, I. H. S. (1983) 'Introduction: a reorientation of health care?' In S. K. Hatch. (ed.) *Self-help in Europe. New approaches in health care.* Copenhagen: WHO.

Kickbush, I. (1988) 'Introduction', in R. Anderson. (ed). *Health behaviour research and health promotion.* Oxford: Oxford University Press.

Kickbush, I. (1989) 'Self-Care in Health Promotion', *Social Science & Medicine,* 29 (2), pp. 125-130.

Killingworth, J. R. Hossain, N. Hendrick-Wong, Y. Thomas, S. D. Raham, A. & Begum, T. (1999) 'Unofficial fees in Bangladesh: price equity and institutional issues,' *Health Policy and Planning,* 14 (1), pp. 152-163.

Kleinman, A. (1980) *Patients and Healers in the context of Culture,* Berkley: University of California Press.

Kosek, M. Bern, C. & Guerrant, R. (2003) 'The global burden of diarrhoeal disease, as estimated from studies published between 1992 and 2000.' *Bulletin of the World Health Organization,* 81 (3), pp. 197-204.

Krishna, A. (2004) 'Escaping poverty and becoming poor: who gains, who loses, and why?' *World Development,* 32 (1), pp. 121-136.

Kroeger, A. Ochoa. H. Arana, B. Diaz, A. Rizzo, N. & Flores, W. (2001) 'Inadequate drug advice in the pharmacies of Guatemala and Mexico: the scale of the problem and explanatory problems,' *Annals of Tropical Medicine and Parasitology*, 95 (6), pp. 605-616.

Kroeger, A. (1983) 'Health interview surveys in developing countries: a review of methods and results,' *International Journal of Epidemiology*, 12 (4), pp. 465-481.

Kronefeld, J. (1979) 'Self-care as a panacea for the ills of the health care system: an assessment,' *Social Science and Medicine,* 13 (A), pp. 263-267.

Kyei, P. (2000). *Decentralization and poverty alleviation in rural Ghana.* Unpublished doctoral dissertation, University of Durham, UK.

Langellier, K., (2001) 'You're marked': Breast cancer, tattoo and the narrative performance of identity,' In J. Brockmeier and D. Carbaugh (eds). *Narrative and Identity: Studies in Autobiography, Self, and Culture.* Amsterdam: John Benjamins.

Leneerts, M. H. Teel, C. S. & Pendleton, M. K. (2002) 'Building a Model of Self-Care for Health Promotion in Aging,' *Journal of Nursing Scholarship,* 34 (4), pp. 355-361.

LeFort, S. M. Gray-Donald. K. Rowat, K. M. & Jeans, M. E. (1998) 'Randomised controlled trial of a community-based psychoeducation programme for the self-management of chronic pain', *Pain,* 74 (2-3), pp. 297-306.

Lehoux, P. Poland, B. & Daudelin, G. (2006) 'Focus group research and "the patient's view,"' *Social Science and Medicine,* 63 (8), pp. 2091-2104.

Levin, L. S. (1976) 'The layperson as the primary health care practitioner,' *Public Health Report,* 91 (3), pp. 206-210.

Levin, L. S. (1977) 'Forces and issues in the revival of interest in self-care: impetus and redirection in health,' *Health Education Monographs,* 5, pp. 110-124

Levin, L. S. (1981) 'Self-care in health: potentials and pitfalls', *World Health Forum,* 2 (1), pp. 177-184.

Levin, L. S. (1986) 'The lay resource in health and health care,' *Health Promotion International*, 1 (3), pp. 285-291.

Levin, L. S. & Idler, E. L. (1983) 'Self-care in health', A*nnual Review of Public Health,* 4 (1), pp. 181-201.

Levin-Zamir, D. & Peterbug, Y. (2001) 'Health literacy in health systems: perspectives on patient self-management in Israel,' *Health Policy and Planning* 16 (1), pp. 87-94.

Leyva-Flores, R. Kageyama, M. L. & Erviti-Erice, J (2001) 'How people respond to illness in Mexico: self-care or medical care?' *Health Policy,* 57 (1), pp. 15-26.

Lewis, D. (1999) 'Development NGOs and the challenge of partnership,' In: C. J. Finer (ed). *Transnational social policy*. Oxford: Blackwell Publishing.

Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic Inquiry*. California: Sage.

Little, P. R. L. Blowers, H. Garwood, J. Cantrell, T. Langridge, J. & Chapman, J. (2001) 'Should we give detailed advice and information booklets to patients with back pain? A randomized control led factorial trial of a self-management booklet and doctor advice to take exercise for back pain', *Spine*, 26, pp. 2065-2072.

Lopez, A. D. Murray, C. D. Ezzati, M. Jamison, D. T. & Murray, C. J. L (ed.) (2006) *Global burden of disease and risk factors.* New York: Oxford University Press and The World Bank.

Lorant, V. Demarest, S. Miermans, P. J. & Van Oyen, H. (2007) 'Survey error in measuring socioeconomic risk factors of health status: a comparison of a survey and a census,' *International Journal of Epidemiology,* 36 (6), pp. 1292-1299.

Lorig, K. Kraines, R. G. Brown, B. W. Jr, & Richardson, N. (1985) 'A workplace health education program which reduces outpatient visits,' *Medical Care,* 23 (9), pp. 1044-1054.

Lorig, K. Mazonson, P. & Holman, H. (1993) 'Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs,' *Arthritis and Rheumatology*,36 (4), 439-446.

Lorig, K. R. R. R. Stewart, A. L. Sobel, D. S. Brown, B. W. Bandura, A. Gonzalez, V. M. Laurent, D. D. & Holman, H. R. (2001) 'Chronic disease self-management program: 2-year health status and health care utilisation outcomes,' *Medical Care,* 39, pp. 1217-1223.

Lorig, K. & Holman, H. (2003) 'Self-management education: history, definition, outcomes and mechanisms,' *Annals of Behavioural Medicine,* 26 (1), pp. 1-7.

Macfarlane, S. Racelis, M. & Muli-Musiime, F. (2000) 'Public health in developing countries,' *The Lancet*, 356 (2), pp. 841-846.

Mackian, S. (2002) *'A review of health seeking behaviour: problems and prospects.*' Health Systems Development Programme. University of Manchester.

Maclean, H. (1991) 'Patterns of diet related self-care in diabetes,' *Social Science & Medicine*, 32 (6), pp. 689-696.

Mahbub, A. (2000) 'A documentation on BRAC Shastho Shebika: exploring the possibilities of institutionalisation,' *Social Studies*, XXV, pp. 32-62, Dhaka: BRAC.

Mahmood, S. S. Iqbal, M. & Hanifi, S. M. A. (2009) 'Health-seeking behaviour,' In. A. Bhuiya. (ed). *Health for the Rural Masses: Insights from Chakaria,* Dhaka: ICDDR,B.

Mahmud, S. (2004) 'Making progress under poverty,' *Economic and Political Weekly,* 39 (4), pp. 4081-4092.

Mair, F. S. Haycox, A. & Williams, T. (2000) 'A review of telemedicine cost effectiveness studies,' *Journal of telemedicine and telecare*,' 6 (1), pp. 38-40.

Malhotra, N. Birks, D. (2000) *Marketing Research: An Applied Approach*, Harlow: Pearson Education.

Manderson, L. (1987) 'Hot-cold food and medical theories: overview and introduction,' *Social Science and Medicine,* 25 (4), pp. 329-330.

Mapanga, K. G. & Andrews, C. M. (1995) 'The influence of family and friends' basic conditioning factors and self-care agency on unmarried teenage primiparas' engagement in contraceptive practice,' *Journal of Community Health Nursing,* 12, pp. 89-100.

Marchal, B. & Kegels, G. (2003) 'Health workforce imbalances in times of globalisation: brain drain or professional mobility,' *International Journal of Health Planning and Management,* 18 (1), pp. S89-S101.

Marmot, M. G. (1998) 'Improvement of social environment to improve health,' *The Lancet,* 351 (9095), pp. 57-60.

Mason, J. (1996). *Qualitative researching*. London: Sage.

Mason, J. (2002). *Qualitative researching*. 2nd Edition. London: Sage

Matin, I. & Hadler, S. R. (2002) *Combining methodologies for better targeting of the extreme poor: lessons from BRAC's CFPR/TUP programme.* Dhaka and Ottawa: BRAC and Aga Khan Foundation Canada.

May, T. (2002) *Social Research*. Bristol: Open University Press.

McIntyre, D. Thiede, M. Dahlgren, G. & Whitehead, M. (2006) 'What are the economic consequences for households of illness and of paying for health care in low- and middle-income country contexts?' *Social Science & Medicine,* 62 (4), pp. 858-865.

McKinlay, J. B. (1993) 'The promotion of health through planned socio-political change: challenges for research and policy,' *Social Science and Medicine* 36 (2), pp. 109-117.

Mechanic, D. (1983) 'The experience and expression of distress: The study of illness behaviour and medical utilisation,' In. D. Mechanic. (ed.). *Handbook of health, health care and health professions,* New York: Free Press.

Medicinenet (2010) Medications and Drugs, Available at: http://www.medicinenet.com/metronidazole/article.htm

Meesen, B. Z. Damme, W. V. Devdasan, N. Criel, B. & Bloom, G. (2003) 'Iatrogenic poverty', *Tropical Medicine and International Health,* 8 (7), pp. 581-584.

Meetoo, D. & Temple, B (2003) 'Issues in multi-method research: constructing self-care,' *International Journal of Qualitative Methods,* 2 (3), pp. 1-21.

Mehrotra, A. & Jarrett, S. (2002) 'Improving basic health service delivery in low income countries: "voice" to the poor,' *Social Science and Medicine,* 54 (11), pp. 1685-1690.

Melrose, D. (1982) *Bitter Pills: Medicines and the Third World Poor*. Oxford: Oxfam

Mercer, A. H. S. Khatun, J. Kabir, H. Saha, N. Uddin, J. & Hasan, Y. (2005) 'Screening for service needs in primary health clinics: an evaluation in Bangladesh,' *Journal of Health and Population in Developing Countries*, 1 (2), pp. 29-39.

Miles, M. & Huberman, A. (1994). *An expanded sourcebook: qualitative data analysis*. London: Sage.

MOHFW (1998) Health and Population Sector Programme, 1998-2003. Programme implementation plan, Part 1. Ministry of Health and Family Welfare, Government of Bangladesh: Dhaka.

Montgomery Jr, E. B. Lieberman, A. Singh, G. & Fries, J. F. (1994) 'Patient education and health promotion can be effective in Parkinson's Disease: A randomized control trial,' *American Journal of Medicine,* 7 (5), pp. 429-435.

Moore, J. L. & Inui, T. (1980) 'Effect of a self-care book on physician visits,' *Journal of the American Medical Association,* 243 (22), pp. 2317-2320.

Morgan, D. L. (1997). *Focus groups as qualitative research*. London: Sage

Morrison, E. M. & Lift. H. S. (1990) 'Health maintenance organisations environment in the 1980s and beyond,' *Health Care Financial Review,* 12, pp. 81-90.

Moser, C. (1998) 'The asset vulnerability framework, reassessing urban poverty reduction strategies,' *World Development,* 26 (2), pp. 1-19.

Muela, S. H. Ribera, J. M. & Nyamongo, I. (2003) *Health seeking behaviour and the health system response.* DCPP Working Paper No. 14.

Mujumder, A. K. & Islam, S. M. S. (1993) 'Socioeconomic and environmental determinants of child survival in Bangladesh,' *Journal of Biosocial Science,* 25 (3), pp. 311-318.

Murray, C. J. L. & Lopez, A. D. (1997) 'Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study,' *The Lancet,* 349 (9063), pp. 1436-1442.

Murshid, T.M. (1995) Women, Islam and the State in Bangladesh Subordination and Resistance. Paper presented at The 1995 Bengal Studies Conference, University of Chicago, April 28–30.

Myaux, J. Ali, M. Felsenstein, A. Chakraborty, J. & de Francisco, A. (1997) 'Spatial distribution of watery diarrhoea in children: identification of "risk areas" in a rural community in Bangladesh,' *Health & Place,* 3 (3), pp. 181-186.

Nahar, S. & Costello, A. (1998) 'The hidden cost of 'free' maternity care in Dhaka, Bangladesh,' *Health Policy and Planning,* 13 (4), pp. 417-422.

Nahar, P. (2007) *Childless in Bangladesh: suffering and resilience among rural and urban women.* PhD Thesis: University of Amsterdam.

Naidoo, J. & Wills, J. (2009) *Foundations for health promotion,* New York: Elsevier.

Narayan, D. C. R. Shah, M. K. & Petesch, P. (2000) *Voices of the poor: Crying out for change.* New York: World Bank.

NDMAC (2005) 'Self-care: making Canadians healthier' Ottawa: NDMAC.

Needham, D. & Bowman, M. (2003) 'Patient seeking care barriers and tuberculosis programme reform: A qualitative study,' *Health Policy,* 67 (1), pp. 93-106.

Nettleton, S. (2006) *The sociology of health and illness*. Cambridge: Polity Press.

Ngokwey, N. (1995) 'Home remedies in Feira (Brazil)', *Social Science & Medicine,* 40 (8), pp. 1141-1153.

Nichter, M. (1996) 'Pharmaceuticals, the commodification of health care - medicine use transition', in M. Nichter. (ed.). *Anthropology and International Health.* Amsterdam: Gordon and Breach Publishers.

Nichter, M. & Vuckovic, N. (1994) 'Understanding medication in the context of social transformation', in N. L. Etkin, & M. L. Tan. (eds.). *Medicines: Meaning and Contexts.* Amsterdam: Action Health Information Network.

NIPORT (National Institute of Population and Training), ORC Macro, Johns Hopkins University & ICDDR,B (2003) *Bangladesh Maternal Health Services and Mortality Survey 2001*. Dhaka: ICDDR,B.

Noponen, H. & Kantor, P. (2004) 'Crises, setbacks and chronic problems - the determinants of economic stress events among poor households in India,' *Journal of International Development,* 16 (4), pp. 529-545.

Nyamongo, I. K. (2002) 'Health care switching behaviour of malaria patients in a Kenyan rural community,' *Social Science and Medicine,* 54 (3), pp. 377-386.

Nyhilin, K. (1991) 'The fine balancing act of managing diabetes', *Scandinavian Journal of Caring Sciences,* 5 (4), pp. 187-194.

OECD (2003) *Poverty and Health.* DAC Guidelines and Reference Series.

Ojanuga, D. & Gilbert, C. (1992) 'Women's access to health care in developing countries,' *Social Science & Medicine,* 35 (4), pp. 613–617.

Okeke, I. N. Lamikanra, A. & Edleman, R. (1999) 'Socioeconomic and behavioural factors leading to acquired bacterial resistance to antibiotics in developing countries,' *Emerging Infectious Diseases*, 5 (1), pp. 18-27.

Okojie, C. E. E. (1994) 'Gender inequalities of health in the Third World,' *Social Science and Medicine,* 39 (9), pp. 1237–1247.

Orbist, B. (2007) *Struggling for health in the city: An anthropological inquiry of health, vulnerability, and resilience in Dar es Salaam, Tanzania*, Bern: Peter Lang Publishing.

Orem, D. E. (1991) *Nursing: Concepts of practice*. St Louis: Mosby.

Orem, D. E. (1995) *Nursing: Concepts of practice*. (5th ed). St Louis: Mosby.

Orem, D, E., (2001) *Nursing: Concepts of practice*. (6th ed.). St. Louis: Mosby.

PAGB (2003) *Advancing self-care: Helping people take care of their own health.* London: Proprietary Association of Great Britain.

Pagan, J. A. Ross, S. Yau, J. & Polskey, D. (2006) 'Self-medication and health insurance coverage in Mexico,' *Health Policy,* 75 (2), pp. 170-177.

Patton, M. Q. (2002) *Qualitative research and evaluation methods*. London: Sage.

Paul, B. K. (1999) 'National health care 'by-passing' in Bangladesh: a comparative study', *Social Science & Medicine,* 49 (3), pp. 679-689.

Paul, B. K. (2006). Health seeking behaviour of people with arsenicosis in rural Bangladesh. World Health and Population September 2006. Kansas State University

Peden, A. (1994) 'Up from depression: strategies used by women recovering from depression,' *Journal of Psychiatric and Mental Health Nursing,* 1 (2), pp. 77-83.

Pender, N. J. Murdaugh, C. L. & Parsons, M. A. (2002) *Health promotion in nursing practice*. New Jersey: Prentice Hall.

Perry, H. B. (2000) *Health for all in Bangladesh: lessons in primary health care for the twenty-first century*, Dhaka: Dhaka University Press.

Peters, D. Garg, A. Bloom, G. Walker, D. Brieger, W. & Rahman, M. (2007) 'Poverty and access to health care in developing countries,' *Annals of the New York Academy of Sciences*, 1136, pp. 161-171.

Phillips, D. R. (1990) *Health and Health Care in the Third World*. London: Longman Development Studies.

Phillips, D. R. & Verhasselt, Y. (2001) *Health and Development*. London: Routledge.

Pigg, L. S. (1995) 'Acronyms and effacement: traditional medical practitioners (TMP) in international health development,' *Social Science and Medicine*, 41 (1), pp. 47-68.

Pill, R. (1988) 'Health beliefs and behaviour in the home', in R. D. Anderson, I. Kickbush, D. McQueen, & J. Turner. (eds.). *Health Behaviour: research and Health Promotion.* Oxford: Oxford University Press.

Portes, A. (1998) 'Social capital: its origins and applications in modern sociology,' *Annual Review of Sociology*, 24 (1), pp. 1-24.

Price, L. J. (1989) 'In the shadow of biomedicine: self-medication in two Ecuadorian pharmacies,' *Social Science and medicine*, 28 (3), pp. 905-915.

Propper, C. (2000) 'The demand for private health care in the UK', *Journal of Health Economics*, 19 (6), pp. 855-876.

Pryer, J. (1989) 'When breadwinners fall ill: Preliminary findings from a case study in Bangladesh,' *IDS Bulletin*, 20 (2), pp. 49-57.

Punamaki, R. L. & Aschan, H. (1994) 'Self-care and mastery among primary health care patients,' *Social Science & Medicine,* 39 (5), pp. 733-741.

Rabbani, G. H. Teka, T. Zaman, B. Majid, N. Khatun, M. & Fuchs, G. J. (2001), 'Clinical studies in persistent diarrhoea: Dietary management with green banana or pectin in Bangladeshi children,' *Gastroenterology*, 121, pp. 554-560.

Radley, A. & Chamberlain, K. (2001) 'Health psychology and the study of the case: From method to analytic concern,' *Social Science & Medicine* 53 (3), pp. 321-332.

Ragins, A. I. (1995) 'Why self-care fails: implementing policy at a low-income sickle cell clinic,' *Qualitative Sociology,* 18 (3), pp. 331-356.

Rahman, S. A. (2000) *Utilisation of primary health care services in rural Bangladesh: the population and provider perspectives,* PhD Thesis. London School of Hygiene and Tropical Medicine, London.

Rahman, S. Hansat, A. Hasan, C. M. Rashid, M. A. & Ilias, M. (2001) 'Pharmacological evaluation of Bangladeshi medicinal plants- a review,' *Pharmaceutical Biology*, 39 (1), pp. 1-6.

Ramakrishna, J. & Brieger, W. R. (1987) 'The value of qualitative research: health education in Nigeria,' *Health Policy and Planning*, 2 (2), pp. 171-175.

Ranna-Eliya, R. & Somanathan, A. (2005) 'Access of the very poor to health services in Asia: Evidence on the role of health systems from Equitap', paper presented at the '*Meeting the health needs of the very poor'* workshop. 14-15 February 2005, Department for International Development (DfID), London.

Rasheed, S. Iqbal, M. & Urni, F. (2009) 'Inventory of facilities,' In. A. Bhuiya. (ed.). *Health for the Rural Masses: Insights from Chakaria.* Dhaka: ICDDR,B.

Rashid, S. F. (1997) '*Women's family planning practices: Transformations, conflicts and dilemmas in rural Bangladesh,*' The Australian National University, unpublished thesis.

Rashid, S. F. (2007) 'Sexuality and rights: Lives of young women in an urban slum in Dhaka, Bangladesh,' *In Plainspeak*, Issue 1.

Rashid, S. F. & Michaud, S. (2000) 'Female adolescents and their sexuality: notions of honour, shame, purity and pollution during the floods,' *Disasters*, 24 (1), pp. 54-70.

Rasmussen, F. (1989) 'Mothers' benefit of a self-care booklet and a self-care educational session at child health centres,' *Social Science and Medicine*, 29 (2), pp. 205-212.

Ray-Bennett, N. S. Collins, A. E. Bhuiya, A. Edgeworth, R. Nahar, P. & Alamgir, F. (2010). 'Exploring the meaning of health security for disaster resilience through people's perspectives in Bangladesh,' *Health and Place*, 16 (3), pp. 581-589.

Redman, B. K. (2007) 'Responsibility for control: ethics of patient preparation for self-management of chronic disease,' *Bioethics*, 21 (5), 243-250.

Reerink, I. H. & Sauerborn, R. (1996) 'Quality of primary health care in developing countries: recent experience and future directions,' *International Journal for Quality in Health Care*, 8 (2), pp. 131-139.

Richardson, G. Gravelle, H. Weatherly, H. & Ritchie, G. (2005) 'Cost-effectiveness of interventions to support self-care: A systematic review', *International Journal of Technology Assessment in Health Care*, 21 (4), pp. 423-432.

Robertson, J. E. (2002) Reflexivity redux: a pithy polemic on 'positionality' Anthropological Quarterly 75 (4) pp.785-792

Robinson-Pant, A, (1996) 'PRA: a new literacy?' *Journal of International Development*, 8 (4), pp. 531-551.

Rogers, A. & Hay, S. (1998) *Self-care and access to health care in opportunities for improving care*. Buckingham: Open University Press.

Rogers, A. Hassell, K. & Nicolaas, G. (1999) *Demanding Patients? Analysing the use of primary care*. Buckingham: Open University Press.

Ronsmans, C. Islam, T. & Bennish, M. (1996) 'Medical practitioners knowledge of dysentery treatment in Bangladesh,' *British Medical Journal*, 313 (7051), pp. 205-206.

Rose, G. (1997) 'Situating knowledges: Positionality, reflexivity and other tactics,' *Progress in Human Geography*, 21 (3), pp. 305-320.

Ross-Degnan, D. Soumerai, S. Goel, P. Bates, J. Makhulo, J. Dondi, N. Sutoto-Daryono, A. Ferraz-Tubor, L. & Hogan, R. (1996) 'A controlled trial of persuasive face-to-face education of diarrhoeal treatment in pharmacies in two developing countries,' *Health Policy and Planning*, 11 (3), pp. 308-318.

Ross, J. L. (1996) The programme response of the social and behavioural sciences to the ICDP-POA: A proposed protocol, 1996-2001. Dhaka: Centre for Health and Population Research.

Ross, J. L. Laston, S. L. Nahar, K. Muna, L. Nahar, P. & Pelto, P. J. (1998) 'Women's health priorities: cultural perspectives on illness in rural Bangladesh,' *Health*, 2 (1), pp. 91-110.

Ross, D. & Vaughan, J. P. (1986) 'Health interview surveys in developing countries: A methodological review,' *Studies in Family Planning*, 17 (2), pp. 87-105.

Roy, S. K. Akramuzzaman, S. M. Haider, R. Khatun, M, Akbar, M. S. & Eeckles, R. (1994) 'Persistent diarrhoea: efficacy of a rice-based diet and role of nutritional status in recovery and nutrient absorption' *British Journal of Nutrition*, 71 (1), pp. 123-134.

Russell, E. M. & Iljon.-Foreman, E. L. (1985) 'Self-Care in Illness: a review', *Family Practice*, 2 (2), pp. 108-121.

Russell, C. Bunting, S. & Gregory, D. (1997) 'Protective care-receiving: the active role of care-recipients,' *Journal of Advanced Nursing*, 25 (3), pp. 532-540.

Russell, S. (1996) 'Ability to pay for Health care: Concepts and evidence', *Health Policy and Planning*, 11 (3), pp. 219-237.

Russell, S. (2003) 'The economic burden of illness for households. A review of illness and coping strategy studies focussing on malaria, tuberculosis and HIV/AIDS', *DCPP,* Working Paper 15.

Russell, S. (2004) 'The economic burden of illness for households: a review of cost of illness and coping strategy studies focussing on malaria, TB and HIV/AIDS.' *American Journal of Tropical Medicine and Hygiene,* 71 (Suppl 2), pp. 147-155.

Russell, S. (2005) 'Illuminating cases: understanding the economic burden of illness through case study household research,' *Health Policy and Planning,* 20 (5), pp. 277-289.

Rutstein, S. (2000) 'Factors associated with trends in infant and child mortality in developing countries during the 1990s,' *Bulletin of the World Health Organisation,* 78 (10), pp. 1256-1270.

Schneider, H. & Palmer, N. (2002) 'Getting to the truth? Research user views on primary health care,' *Health Policy and Planning,* 17 (1), pp. 32-41.

Schulpen, T. W. J. Swinkles, W. J. A. M. (1980) 'The utilisation of health services in a rural area of Kenya', *Tropical Geographic Medicine,* 32 (4), pp. 340-349.

Sclafer, J. Slamet, L. S. de Visscher, G. (1997) 'Appropriateness of self-medication: method development and testing in urban Indonesia,' *Journal of Clinical Pharmacy and Therapeutics,* 22 (4), pp. 261-272.

Seabrook, J. (2001) '*Freedom unfinished: fundamentalism and popular resistance in Bangladesh today*,' London: Zed Books.

Segall, A. Goldstein, J. (1989) 'Exploring the correlates of self-provided health care,' *Social Science & Medicine,* 29 (2), pp. 153-161.

Segall, M. Tipping, G. Lucas, H. Dung, T. V. Tam, N. T. Vinh, V. X. & Huong, D. L. (2002) 'Economic transition should come with a health warning: the case of Vietnam,' *Journal of Epidemiology and Community Health,* 56 (7), pp. 497-506.

Sen, B. (2003) 'Drivers of escape and decent: changing household fortunes in rural Bangladesh', *World Development*, 31 (3), pp. 513-534.

Sen, A. K. (1999) 'Health in Development', *Bulletin of the World Health Organisation,* 77 (8), pp. 619-623.

Sen, B. (1997) *Health and poverty in the context of country development strategy: a case study on Bangladesh.* Macroeconomic and Health Development Series No. 26, Geneva: World Health Organisation.

Sepehri, A. Moshiri, S. Simpson, W. & Sarma, S. (2008) 'Taking account of context: how important are household characteristics in explaining adult health-seeking behaviour? The case of Vietnam,' *Health Policy Planning*, 23 (6), pp. 397-407

Shaheen, R. Rahman, S. M. (2002) ' Unani and Ayurvedic Medicine in Bangladesh: Cognition of health care seekers at a public hospital,' *Journal of Health Management,* 4 (1), pp. 39-53.

Shaikh, B. T. & Hatcher, J. (2005) 'Complementary and alternative medicine in Pakistan: Prospects and limitations,' *Evidence Based Complimentary Alternative Medicine,* 2 (2), pp. 139-142.

Shankar, P. R. Partha, P. & Shenoy, N. (2002) 'Self-medication and non-doctor prescription practices in Pokhara valley, Western Nepal: a questionnaire-based study,' *BMC Family Practice,* 3 (17), pp. 1-7.

Shaul, M. (1995) 'From early twinges to mastery: The process of adjustment in living with rheumatoid arthritis,' *Arthritis Care and Research,* 8 (4), pp. 290-297.

Shiva, M. (1985) 'Towards a healthy use of pharmaceuticals, an Indian perspective,' *Development Dialogue,* 25 (2), pp. 69-93.

Siddiqui, T. & Abrar, C. R. (2003) Migrant worker remittances and micro-finance in Bangladesh. Social Finance Programme Working Paper No. 38. Refugee and Migratory Research Unit. International Labour Office. Government of Bangladesh.

Sillitoe, P. Dixon, P. & Barr, J. (2005) *Indigenous knowledge inquiries: A methodologies manual for development*. Dhaka: The University Press.

Silverman, D. (2001) *Interpreting Qualitative Data: methods for analysing talk, text and interaction.* London: Sage Publications.

Skold, M. (1998) *Poverty and health: who lives, who dies, who cares?* Macroeconomic Health and Development Series No. 28, Geneva: World Health Organisation

Smith, K., (2001) *Environmental hazards: Assessing risk and reducing disaster*. London: Routledge.

Smith, A. H. Lingas, E. O. & Rahman, M. (2000) 'Contamination of drinking water by arsenic in Bangladesh: a public health emergency, *Bulletin of the World Health Organisation,* 78 (9), pp. 1093-1103.

Solomons, N. W. (2001) Health and Ageing. In. R. Flores & S. Gillepsie. (eds.). *Health and Nutrition: Emerging and Remerging Issue in Developing Countries*. Washington: International Food Policy Research Institute

Sowell, R. M. L. Guillory, J. Seals, J. Cohen, L. & Demi, A. (1997) 'Self-care activities of women infected with human immunodeficiency virus,' *Holistic Nursing Practice,* 11 (2), pp. 18-26.

Soussan, J. B. P. Springate-Baginski, O. & Chadwick, M. (2002) *Understanding livelihood processes and dynamics.* London: DfID.

Steffen, R. Banos, A. & deBernardis, C. (2003) 'Vaccination priorities,' *International Journal of Microbial Agents,* 21 (2), pp. 175-180.

Stevenson, F. A. Britten, N. Barry, C. A. Bradley, C. P. & Barber, N. (2003) 'Self-treatment and its discussion in medical consultations: how is medical pluralism managed in practice?' *Social Science & Medicine,* 57 (3), pp. 513-527.

Stuifbergen, A. K. & Rogers, S. (1997) 'The experience of fatigue and strategies of self-care among persons with multiple sclerosis,' *Applied Nursing Research*, 10 (1), pp. 2-10.

Subramanian, S. V. B., P. & Kawachi, I. (2002) 'The macroeconomic determinants of health', A*nnual Review of Public Health*, 23 (1), pp. 287-302.

Sullivan, M. (2003) 'The new subjective medicine: Taking the patient's point of view on health care and health,' *Social Science and Medicine*, 56 (7), pp. 1595-1604.

Sundari, T. K. (1992) 'The untold story: how the health care systems in developing countries contribute to maternal mortality,' *International Journal of Health Services* 22 (3), pp. 513–528.

Swift, J. (1989) 'Why are rural people vulnerable to famine,' *IDS Bulletin*, 20 (2), pp. 8-15.

Talbot, L. & Verrinder, G. (2005) *Promoting health: the primary health care approach*, London: Elsevier.

Tattersall, R. L (2002) 'The expert patient: a new approach to chronic disease management for the twenty first century,' *Clinical Medicine*, 2 (3), pp. 227-229.

Tearfund (2005) 'Before disasters strike: why thousands are dying needlessly each year in preventable disasters. Teddington: Tearfund

Thaver, I. H. Harpham, T. Mcpake, B. & Garner, P. (1998) 'Private practitioners in the slums of Karachi: what quality of care do they offer?' *Social Science & Medicine*, 46 (11), pp. 1441-1449.

Tipping, G. & Segall, M. (1995) *Health care seeking behaviour in developing countries: an annotated bibliography and literature review.* Brighton: University of Sussex.

Tipping, G & Segall, M. (1996) Using a longitudinal illness record to study household health care decision making in rural communes of Vietnam, *Health Policy and Planning*, 11 (2), pp. 206-211.

Titchen, A. & Hobson, D. (2005). Phenomenology. In. J. Goldbart. & D. Hustler. (eds.). *Research Methods in the SocialSsciences*. New Dehli: Vistaar Publications.

UNDP (2003) Human development report: Bangladesh. www.undp.org/hdr2003/indicator/cty_f_BGD.html. (accessed 5th May 2008)

UNICEF (2003) *Child mortality statistics.* [Online]. Available at: http://www.chilinfo.org/cmr/revis/db2.htm (Accessed. 5th May 2008)

UNICEF & WHO (2009) *Diarrhoea: why children are still dying and what can be done,* New York: UNICEF & WHO.

UNDP (2004) *Human Development Report 2004.* Geneva: United Nations Development Programme.

Van Agthoven, W. M. & Plomp, H. N. (1989) 'The interpretation of self-care: A difference in outlook between clients and home-nurses,' *Social Science & Medicine,* 29 (2), pp. 245-252.

Van der Geest, S. (1987) 'Self-care and the informal sale of drugs in south Cameroon,' *Social Science & Medicine,* 25 (3), pp. 293-305.

Van der Geest, S. & Hardon, A. (1990) 'Self medication in developing countries,' *Journal of Social and Administrative Pharmacy*, 7 (4), pp. 199-204.

Vaughan, J. P. Karim, E. & Buse, K. (2000) 'Health care systems in transition. Bangladesh, Part 1. An overview of the health care system in Bangladesh,' *Journal of Public Health Medicine,* 22 (1), pp. 5-9.

Verbrugge, L. (1985) 'Gender and health: an update on hypotheses and evidence,' *Journal of Health and Social Behaviour,* 26 (3), pp. 156-182.

Vickery, D. M. Kalmer, H. Lowry, D. Constantine, M. Wright, E. & Loren, W. (1983) 'Effect of self-care education programme on medical visits,' *Journal of the American Medical Association,* 250 (21), pp. 2952-2956.

Vickery, D. M. Golaszewski, T. J. Wright, E. C. & Kalmer, H. (1988) 'The effect of self-care interventions on the use of medical service within a Medicare population,' *Medical Care, 26*(6), pp. 580–588.

Vickery, D. & Levinson, A. (1993) 'The limits of self-care', *Generations*, 17, pp. 53-56.

Victoria, C. G. Bryce, J. Fontaine, O. & Monasch, R. (2000) 'Reducing deaths from diarrhoea through oral rehydration therapy,' *Bulletin of the World Health Organisation,* 78 (10), pp. 1246-1255.

Vissing, Y. M. (1987) 'Self-care as primary health care: use by holistic advocates' In. D. Y. Wilkinson. & M. B. Sussman. (eds.). *Alternative health maintenance and health systems for families*. London: The Hawthron Press.

Vita, A. J. Terry, R. B. Hubert, H. B. & Fries, J. F. (1998) 'Aging, health risks and cumulative disability,' *New England Journal of Medicine,* 339 (17), pp. 481-482.

Von Korff, M. Moore, J. E. Lorig, K. Cherkin, D. C. Saunders, K. Gonzalez, V. M. Laurent, D. Rutter, C. & Comite, F. (1998) 'A randomized trial of a lay person-led self-management group intervention for back pain patients in primary care', *Spine*, 23 (3), pp. 2608-2615.

Wagstaff, A. (2002) 'Poverty and health sector inequalities,' *Bulletin of the World Health Organisation,* 80 (2), pp. 97-105.

Wahed, T. & Mahmood, S. S. (2009) 'Cost associated with utilisation of health care services,' In. A. Bhuiya. (ed.). *Health for the Rural Masses: Insights from Chakaria*. Dhaka: ICDDR,B.

Waitzkin, H. (2000) *The second sickness: Contradictions of capitalist health care*, Lanham: Rowman and Littlefield.

Wallman, S. & Baker, M. (1996) 'Which resources pay for treatment? A model for estimating the informal economy of health,' *Social Science and Medicine*, 42 (5), pp. 671-679.

Walt, G. (1990) *Community Health Workers in National Programmes*, Milton Keynes: Open University Press.

Wang, H. H. & Laffrey, S. C. (2001) 'A predictive model of well-being and self-care for rural elderly women in Taiwan,' *Research in Nursing and Health*, 24 (2), pp. 122-132.

Ward, P. (1987) 'Reproduction of social inequality: access to health services in Mexico City,' *Health Policy and Planning*, 2 (1), pp. 44-57.

Water Aid (2009) *Fatal Neglect: how health systems are failing to comprehensively address child mortality*, London: Water Aid.

WCDR. (2005) *The United Nations Hyogo Accord*, Kobe, Japan.

Webb, P. (1993) 'Coping with drought and food insecurity in Ethiopia', *Disasters*, 17 (1), pp. 33-47.

Weiss, M. (1988) 'Cultural meaning of diarrhoeal illness: conceptual frameworks and review,' *Social Science and Medicine* 21 (1), pp. 5-16.

Weller, S. C. Ruebush, T. R. & Klein, R. E. (1997) 'Predicting treatment seeking in Guatemala: comparison of health service research and decision theoretic approaches,' *Medical Anthropological Quarterly*, 11, pp. 224-245.

Werner, D. (1997) 'Challenges facing 'Health for All': The new world order- a challenge to health for all by the year 2000. Keynote address. Proceedings of the International conference held at the University of Cape Town, South Africa.

Whitehead, M. Dalhgren, G. & Evans, T. (2001) 'Equity and health sector reforms: can low-income countries escape the medical poverty trap?' *Lancet*, 358 (9284), pp. 833-836.

WHO (1978) Declaration of Alma-Ata: international conference on primary health care, Alma-Ata, USSR, Sept 6–12, 1978
http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf (accessed Aug 28, 2007)

WHO (2000a) 'WHO guidelines for the regulatory assessment of medicinal products for use in self-medication', *WHO Drug Information*, 14, pp. 18-26.

WHO (2000b) World Health Report 'Health systems: improving performance,' Geneva: WHO

WHO (2000c) Global measles vaccine coverage and reported cases, 1980-1999. Available at http://www.who.int/vaccinessurveilance/graphics/htmls/measlescascov.htm

WHO (2001). *Improving Health Outcomes of the Poor: The Report of Working Group 5 of the Commission on Macroeconomics and Health*. Geneva: World Health Organisation.

WHO (2003) *World Health Report, 'Shaping the future,'* Geneva: WHO

WHO (2004) *World Health Report, 'Changing History,'* Geneva: World Health Organisation.

WHO (2007) WHO model list of essential medicines, 15th Edition, Geneva: WHO.

WHO (2008) *World Health Report, 'Primary health care - now more than ever,'* Geneva: WHO.

WHO (2009) *Regional Consultation on Self Care in the Context of Primary Health Care*, Bangkok, Thailand, 7-9 January 2009.

WHO (2010) Diarrhoeal Disease Fact Sheet No. 330, available at http://www.who.int/mediacentre/factsheets/fs330/en/index.html

Wilkes, A. Hao, Y. & Bloom, G. (1997) *Coping with the cost of severe illness in rural China.* Brighton, Sussex: Institute of Development Studies.

Wilkinson, I. F. Darby, D. N. & Mant, A. (1987) 'Self-care and self-medication: an evaluation of individuals health care decisions,' *Medical Care* 25 (10), pp. 965-977.

Wilkinson, A. & Whitehead, L. (2009) 'Evolution of the concept of self-care and implications for nurses: A literature review,' *International Journal of Nursing Studies*, 46 (8), pp. 1143-1147.

Wilson, P. M. Kendall, S. & Brook, S. (2007) 'The Expert Patients Programme: a paradox of patient empowerment and medical dominance,' *Health and Social Care in the Community,'* 15 (5), pp. 1-13.

Winch, P. J. Gilroy, C. Starbuck, E. S. Young, M. W. Walker, L. D. & Black R. E. (2005) 'Intervention models for the management of children with signs of pneumonia or malaria by community health workers,' *Health Policy and Planning*, 20 (4), pp. 199-212.

Wolffers, I. (1987) 'Drug information and sale practice in some pharmacies in Colombo, Sri Lanka,' *Social Science & Medicine,* 25 (3), pp. 319-321.

World Bank. (1993) *World development report: Investing in health.* Washington DC: World Bank.

World Bank (2000) *Health, Nutrition and Population, Poverty Thematic Group, Socioeconomic Differences in Health, Nutrition and Population in 44 Countries.* Washington DC: World Bank.

World Bank (2001) *World Development Report: Attacking Poverty: Opportunity, empowerment and security*. Washington DC: World Bank.

World Bank (2002) *Bangladesh: improving governance for reducing poverty*. Washington DC: World Bank.

World Bank. (2003) *Private sector assessment for health, nutrition and population (HNP) in Bangladesh*, Washington DC: World Bank.

World Bank (2004) *World Development Report 2004: Making services work for poor people,* Washington DC: World Bank.

World Bank (2005) *Attaining the millennium development goals in Bangladesh*, Human Development Unit, South Asian Region, World Bank. Available from: www.lcbangladesh.org/mdgs/docs/Final_Bdesh_MDG_report-WB.pdf (accessed July 2008).

Yazbeck, A. S. & Gwatkin, D. R. (2005) *Health services and the poor: Vigilance, hope and hard work.* [Online]. Available at: http://www1.worldbank.org/devoutreach/may05/article.asp?id=294.

Yeager, B. A. C. Huttly, S. R. Bartolini, R. Martha Rojas, A. & Lanata, C. F. (1999) 'Defecation practices of young children in a Peruvian shanty town,' *Social Science & Medicine,* 49 (4), pp. 531-541.

Yesudian, C. A. K. (1994) 'Behaviour of private sector in the health market of Bombay,' *Health Policy and Planning,* 9 (1), pp. 385-393.

Young, J. C. (1981) *Medical Choice in a Mexican Village*. New Brunswick: Rutgers University Press.

Young, L. & Barrett, H. (2001) 'Adapting visual methods: action research with Kampala street children,' *Area,* 33 (2) pp. 141-152.

Zaman, S. Rahman., H. & Edgeworth, R. (2004) 'Health domain of the ultra poor: An exploration.' *CFPR/TUP Working Paper Series,* (5), pp. 1-25.

Zaman, S. (2005) *Broken Limbs, Broken Lives: Ethnography of a Hospital Ward in Bangladesh*, Amsterdam: Het Spinhuis.

Zhang, T. Liu, X. Bromley, H. & Tang, S. (2007) 'Perceptions of tuberculosis and health seeking behaviour in rural Inner Mongolia, China,' *Health Policy*, 18 (1-2), pp. 155-165.

Zodpey, S. P. Desphande, S. G. Ughade, S. N. Hinge, A. V. & Shirikhande, S. N. (1998) 'Risk factors for development of dehydration in children aged under five who have acute watery diarrhoea: a case control study,' *Public Health,* 112 (4), pp. 233-236.

Zwi, A. B. & Yach, D. (2002) 'International health in the 21st Century: trends and challenges,' *Social Science and Medicine,* 54 (11), pp. 16150-1620.

Appendix 1 ICDDR, B

ICDDR,B is an international health research institution located in Bangladesh that conducts research, training and programme-based activities to address critical global health and population needs. The organisation has a mix of national and international staff, including public health scientists, laboratory scientists, clinicians, nutritionists, epidemiologists, demographers, social and behavioural scientists, and experts in emerging and re-emerging infectious diseases, vaccine sciences, etc. ICDDR,B's activities are supported by approximately 55 donor countries and organizations, including the Government of Bangladesh, UN agencies, universities, research institutes and private sector organizations and companies.

The organisation has an international reputation for achieving groundbreaking research and interventions of the highest standard which have provided guidelines for policy makers and health professionals working in both Bangladesh and throughout the developing world.

Appendix 2 Chakaria Community Health Project

In 1994, ICDDR,B started a community development oriented health project called Chakaria Community Health Project in Chakaria upazila of Cox's Bazar district in Bangladesh. The community development approach or the 'CD approach' emerged as a new concept in the development agenda during the last couple of decades. The CD approach assumes that the sustainability of a development programme depends largely on how much participation of general people is there in the design and implementation of a programme. Usually, development programmes are imposed on the community from the top-level change agents who often ignore the need of a community as felt by its people. 'Felt need' of the administrators is not necessarily the actual common need of the community.

Chakaria Community Health Project building

The CD approach serves to 'sensitize' the people in the community and to 'facilitate' the programmes undertaken with active participation of the people in the community, without financial or material assistance. The CD workers, while playing the role of facilitator, may also generate ideas for change but never impose those on the community against the will of the people as is done in the traditional top-down development programmes. The Chakaria Community Health Project of the Centre, mainly financed by a consortium of Swiss, Dutch and German Red Cross societies, is based on the above premise. Six unions surrounding the Project office near Chakaria upazila headquarters constitute the fieldsite of the CCHP. The intervention unions are: Baraitali, Kaiyerbil, B.M. Char, Shaharbil, Poschim Bara Bheola, and Kakara. Purba Bara Bheola has been selected to serve as 'comparison union' in the impact studies being done in this conservative coastal belt of Bangladesh.

Activities and Achievements

Since its inception in 1994, the CCHP achieved a considerable success in mobilizing the intervention communities toward self-help for health. Baseline surveys were conducted in the intervention areas to collect information on disease burden, health knowledge and behavioural pattern of people, existing health facilities, and more importantly, to understand the social structures, including indigenous self-help organizations (SHOs) or groups that are well-rooted in the community and committed to serve as links between the people and the CCHP facilitators. The SHOs include: local clubs, management committees for primary and secondary schools, colleges, madrashas, moktobs, temples, and the kinship and other social groups that play important roles in the process of diffusion and adoption of innovations. The baseline surveys also identified resource persons and opinion leaders in the intervention unions. The total number of SHOs in the intervention areas, so far selected to work with the Project is 203. The preliminary interest of the CCHP workers was to know whether these SHOs had health on their agenda prior to the baseline surveys. The maiden attempt of the CCHP workers was to discuss and incorporate health as an agendum in the myriad of activities of the SHOs in the intervention areas. The efforts of the CCHP workers soon resulted in a widespread awareness of the need for their own health facility, other than the inadequate facilities offered by private practitioners, Government, and NGOs in the community. The outcome was the establishment of Village Health Posts at the initiative of people in the community.

Village Health Posts and CCHP

The Village Health Posts (VHPs) are rural health facilities established at the initiative of the villagers, without financial or material assistance. The CCHP plays an important role as facilitator in the process of establishing and also in the functioning of the VHPs (see

diagram). After the baseline surveys, the CCHP workers initiated an exercise called People's Participatory Planning (PPP) in their intervention areas. These included workshops and group discussions with the local SHOs and training of the village health workers, midwives, and self-help volunteers to make them ready for rendering medical services to the beneficiaries and working as key resource persons and the main social force toward sustainability of the VHPs. The self-help promotion instruments as shown in the diagram comprise a set of tools used by the CCHP for promotion of self-help for health. These are: identification of target population and self-help organizations, mobilization and motivation, identification of activities through participatory needs assessment and planning, education and training, resource mobilization, management support, linkage with third parties, process extension and movement, monitoring, and evaluation.

Appendix 3 BRAC and the CFPR/TUP Programme

The Bangladesh Rural Advancement Committee commonly referred to by its acronym BRAC was established after the country's independence in 1971. Initially the organisation worked in isolated rural areas with millions of returning refugees who had fled to India during the war for independence. Preliminary tasks focussed upon housing, food, employment and health as the organisation attempted to reconstruct villagers lives. While early efforts were directed towards the provision of materials to rebuild homes, supporting fishing infrastructure and agriculture, BRAC believed this support should be concentrated on the most deprived (Chowdhury & Bhuiya, 2000). Therefore, landless women and their families became the focus of BRAC which established a broad range of development initiatives aimed to empower them as individuals and as an important part of the larger community (Chowdhury, 2002).

These initiatives and interventions emphasised group formation and functional literacy utilising a Freire form of conscientization (Friere, 2000), training in rural income projects and credit schemes offered to establish greater levels of collateral. Today these efforts have grown to embrace a rural banking scheme, cooperatives in silk production and marketing, agricultural produce, 35,000 schools and large scale management and training. The scale of current BRAC interventions and programmes is outlined in the table below highlighting why the organisation is currently the world's largest indigenous NGO.

In addition to establishing programmes to foster income and employment generation, BRAC aids the poor in forming self-help organisations, encourages conscientization, awareness raising, gender equity and human resource development training (BRAC, 2003). The logic of these programmes is the creation of an 'enabling environment' in which the poor can participate in their own development to improve the quality of their lives (Chowdhury, 2002).

This is strongly demonstrated within the organisations various health programmes, particularly the impact female health workers (referred to as Shastho Shebikas) have produced within many aspects of health care. On the basis of the 'barefoot doctors' concept in China BRAC introduced Shastho Shebikas (SS) to facilitate a more comprehensive health care package to poor households. Selected from within the communities in which they would serve the SS offered a new avenue in reaching the underserved rural poor population. Having a trained worker in the villages eliminated distance, time and travel cost constraints to health facility use. They are known to the villagers and therefore bridge the social and cultural gap that discourages people from using formal institutional health facilities (Mahbub, 2000). This has been reflected by higher usage and continuation rates for family planning methods in BRAC areas when compared to government health coverage regions (Chowdhury, 2002). One of the organisations greatest impacts within the health sector has been the implementation of oral rehydration therapy (ORT) to address diarrhoeal diseases. Over the course of a decade, SSs visited more than 13 million households which has significantly contributed to the reduction in child and infant mortality (Chowdhury & Cash, 1993).

The CFPR/TUP Programme

Since January 2002, BRAC began a new experimental programme for the ultra poor called 'Challenging the Frontiers of Poverty Reduction/Targeting the Ultra Poor' (CFPR/TUP). This programme targets the ultra poor who are either bypassed or fail to benefit, leading to drop out, from existing development programmes. The programme uses an asset-based

approach where physical assets are provided to the ultra poor as grants. The overall idea of the programme is to strengthen the physical, social and human asset base of the ultra poor so that once the grant phase is over, they can attain the foundation for sustainable livelihoods, and participate and benefit from mainstream development programmes (Matin & Halder, 2002). The intervention strategy also includes social development and health components in which health education dissemination aims to increase ultra poor household awareness of these issues. Furthermore, it aims to facilitate the ultra poor to gain comparatively greater access to health care service delivery. Although preventive health care is given higher priority, curative measures are also incorporated to provide assistance in treatment seeking and access to government and NGO services.

The provision of health care services for the ultra-poor follows three implementation strategies. Firstly, the provision of a package of basic/essential health care services for all specially targeted ultra-poor, irrespective of their health condition. The second strategy promotes free-of-charge installation of sanitary latrines and tubewells plus safety testing of tubewells. Finally, the programme seeks to provide 'consumer information', facilitated access and financial assistance for illness care. At the core of these interventions are the household visits by BRAC Health personnel who visit all ultra poor households for health education on a six-weekly cycle, while also asking about sickness in the household and providing antenatal and post-natal care and assisting with access to and utilisation of health care facilities. Priority access to GOB health care by TUP members and their household members is achieved on the basis of the TUP identification card. Recognition of the card is achieved through advocacy meetings with Government officials, managers of other NGOs and social elites held at district and Upazila levels and through personal contacts with GOB health personnel (CFPR/TUP, 2004).

Appendix 4 Disaster and Development Centre

The Disaster and Development Centre (DDC) aims to reduce the impact of disasters and increase sustainable well-being. DDC focuses on issues that involve disaster management and sustainable development through research, teaching and learning internationally, regionally and locally. DDC addresses human resilience and security, complex emergencies and hazards in an inter-disciplinary manner guided by the needs of civil society. It is a response to demand for an improved interpretation under varied cultural and disciplinary contexts of the role of disasters in development and of development in disasters.

The centre prioritises integration of disaster reduction and sustainable development in its activities across a number of themes. This includes:

1. Disaster resilience and sustainable livelihoods
2. Health security and infectious disease risk management
3. Social care in disaster and development
4. Community mental health and wellbeing
5. Integrated emergency management and security
6. Migration and displacement
7. Gender and disaster

Examples of cross cutting issues in disaster and development include risk assessment and management, rights, representation, governance, security, prevention, early warning, communication, and community based approaches. The work of the DDC is carried out in conjunction with civil society groups, NGOs, government departments, the United Nations and other international organisations.

Appendix 5 The Meaning of Health Security for Disaster Resilience in Bangladesh

Project Partners

This two year project is implemented by the Disaster and Development Centre (DDC) at Northumbria University, United Kingdom and The Centre for Health and Population Studies (ICDDR,B) in Bangladesh. Funding for the research project is provided by the Economic and Social Research Council (ESRC) and the Department for International Development (DfID).

Purpose of the Project

The health consequences of disaster have been well understood and documented. The impact of pre-disaster health status of a population or its proxies on pre and post disaster resilience and recovery is less known. The Health Security project aims to contribute to a goal of poverty and disaster risk reduction through identification and better understanding of a health security approach. Health security is understood as people's resilience to physical and mental stresses or shocks, trends, presence of basic rights, basic needs and not merely absence of disease or infirmity. There is an overlap with aspects of environmental, livelihood, social, economic and political security in understanding health security and disasters.

Project Aims

Based on this rational the overall aim of the research is to explore what added value health security brings to livelihood security and risks reduction frameworks, which in turn involves:

- Knowing how health security is interpreted in terms of disaster vulnerability
- Identifying how health security influences vulnerability and resilience
- Assessing how health security monitoring can facilitate early warning and preparedness against changing thresholds of disaster risk
- And evaluating which approaches to health security enable people to monitor resilience as an aid to mitigating the impact of disaster events

Additionally we explore some more thematic questions such as:

- Which health security indicators of pre-disaster preparedness and sustainable development apply best in contexts of high risk major incidents?
- How can people monitor health security themselves as part of self-care for disaster resilience at local and wider levels?
- What are the circumstances within which different scales of health security monitoring – local, sub regional, and national can facilitate early warning of changing thresholds of disaster risk?
- What aspects of health security in Bangladesh make people and places vulnerable or resilient to disasters?
- What is the theoretical basis for implementing an integrated infectious disease risk and poverty reduction agenda as part of disaster risk reduction in Bangladesh?
- How can self-care health security and that provided externally be made more readily accessible to people through health risk management communication and participation?
- What does it mean to mainstream health security into disaster risk reduction?

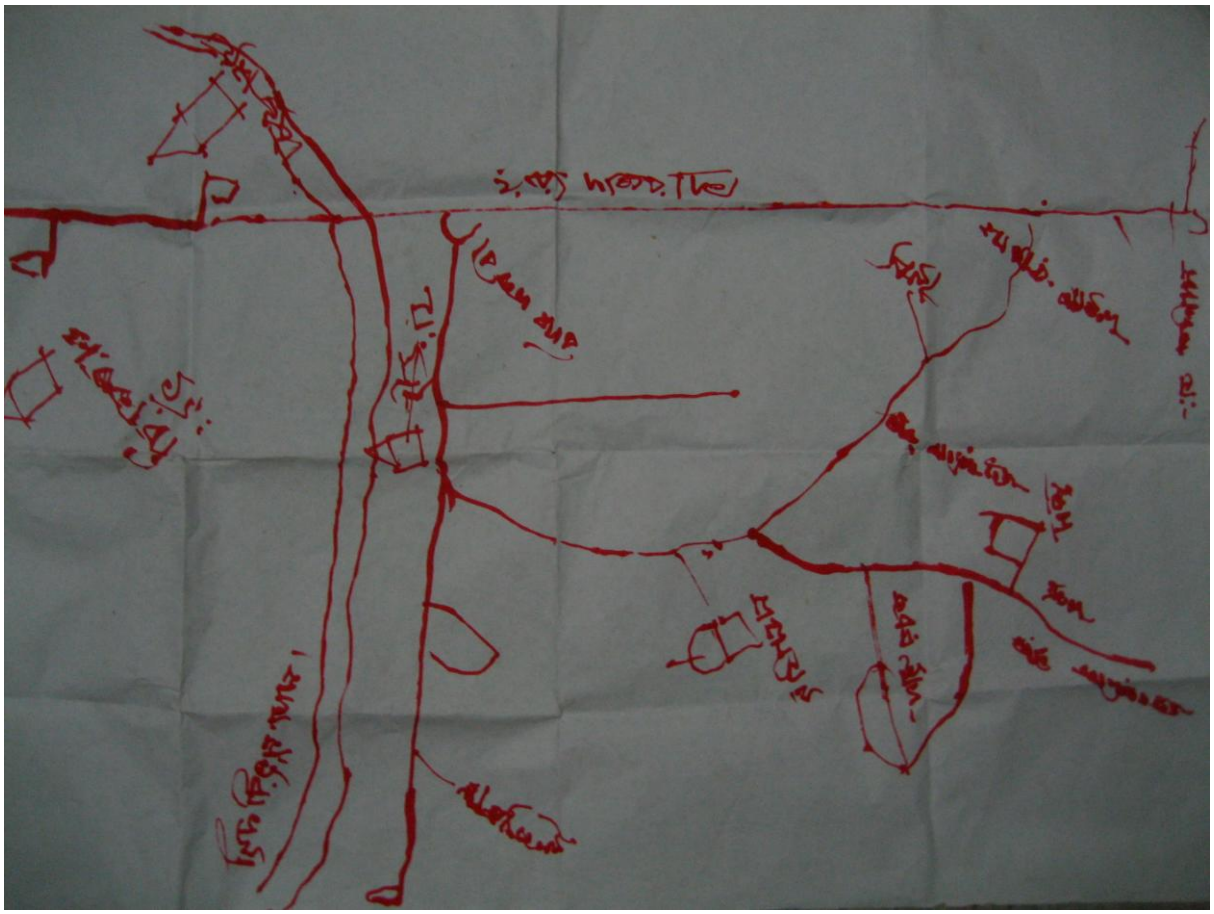
Project Activities

The study employs the following activities to achieve the objectives outlined above:

1. Literature review to document how health security has been considered in the context of disaster resilience
2. Analysis of secondary data to assess the relationship of pre-disaster health status of a population and post disaster health indicators, including mortality
3. Collection of information about the perceptions of various stakeholders such as community members, disaster related workers at the community level and officials of disaster related organisations and agencies. Information on health care practices and health facilities at the community level will also be collected.

Field work will be carries out in three disaster prone areas of Matlab, Chakaria and Domar. Data will be collected through a questionnaire survey of 660 households and PRA activities including FGDs, interviews, mapping exercises and photo diaries.

Appendix 6 Example of Health Mapping Exercise



Appendix 7 Key Points of Departure for FGDs and Interviews

Self-Care

1. What types of self-care do you use when suffering from ill health? Are there any specific types of self-care treatment you use when suffering from diarrhoea, dysentery, typhoid etc?
2. Why do you use these self-care practices? / Why do you use self-care treatments for this illness?
3. Can you tell me about the last time you used self-care practices when ill or a member of your family was ill?
4. What types of self-care are used when suffering from diarrhoea?
5. Does the type of self-care used vary over time?
6. Does the type of self-care differ depending on the type of diarrhoeal disease?
7. Why do they alter the type of self-care administered?
8. What do you regard to be forms of self-care?
9. Did you have to change the type of treatments used?
10. How long does it take to prepare and administer this SC practice?
11. Is there anything that would stop you from using this type of SC again?
12. Are you able to easily access the natural resources you need to prepare these SC methods?
13. What are the best types of self-care? Why?
14. Do you think more people should use self-care? Why?
15. Does the type of self-care used differ between people for the same illness?
16. To what extent would you be interested in playing a greater role in treating yourself for minor illnesses?
17. Do you want to take more responsibility for your health?

18. What does self-care mean to you?

19. What does self-care involve?

20. What do you call self-care? How would you describe self-care from the following choices:

    Shaustho sheba

    Shastho bebusta

    Jotno

    Neejer jotno

    Shausther Jotno

    Rugir sheba

    Nejer chekessa

21. Do you think there are any risks associated with the adoption of self-care? If yes, what influences your decision to adopt self-care in the face of those risks?

22. Are you more likely to use self-care practices or visit the doctor when the floods are here?

23. Have there been any occasions when you tried self-care and it was unsuccessful? What happened?

24. If I were to get sick here in this place with diarrhoea/dysentery how much would I have to spend to get treatment, medicines and travel?

25. To what extent would you be interested in playing a greater role in treating yourself for minor illnesses?

26. Do you want to take more responsibility for your health?

<u>Support</u>

1. Does anyone help you in using self-care methods?

2. What do you need to be able to do self-care well?

3. Do you receive any support from family, friends, and neighbours when using self-care practices?

4. Do any health practitioners support your use of SC?

5. Do any NGOs promote these types of self-care practices?

6. What role do the self-help groups have in regards to health?

Outcomes

1. What were the outcomes on your health through use of these self-care practises
2. What advantages are there in using self-care
3. What disadvantages are there in using self-care
4. Are there any times when using self-care is inappropriate or the wrong choice in your opinion?
5. Do you know anyone who has had a very bad experience in using self-care?
6. Do you know anyone who has had a very good experience in using self-care?
7. What are the best types of self-care?
8. What are the least effective types of self-care? Why do people still use this?

Cost/Opportunity Cost

1. How much taka would you spend on treating this illness/diarrhoeal disease if you went to the Doctor? Fees? Transport? Medicines?
2. Does it cost you anything to prepare this SC method?
3. If you went to the Doctor from your home how long would it take to see the doctor, get the medicines and return home?

Knowledge

1. Where did you learn about these SC practices?
2. Would you want more knowledge about ways to manage illness by yourself at home?
3. Do any health practitioners tell you about other SC practices you should use?
4. Will you pass on your knowledge of the SC practices onto others (neighbours/friends/children)?

Self-efficacy

1. Do you feel confident in your use of SC practices?

2. How confident are you that you have the knowledge and understanding to treat your own illnesses without seeing a doctor?

3. What impact would greater guidance and support from the doctor have upon your ability to use self-care for minor illnesses?

4. When you see a doctor do you feel confident to discuss your health problems with them openly?

Health System

1. When you went to the doctor did you tell him about the types of self-care treatments previously used for this illness

2. Do you use any medicines without consulting a doctor? If so, which types of illnesses do you do this for and why do you consult a doctor

3. Have you consulted a traditional healer/pharmacist/drug vendor for any illness? If so, what illness and why this practitioner?

4. Do any health practitioners support your use of SC?

5. Do any health practitioners tell you about other SC practices you should use?

6. Do you tell the doctor/health practitioner that you have used SC first for this illness? Why? Why not?

7. Are you ever encouraged by the doctor to use self-care?

Frequency

1. When do you think it is the best time/correct/appropriate to use SC when ill/suffering diarrhoea?

2. How long have you used this type of SC practice?

3. Do lots of people use SC when ill/for diarrhoea? Why? Why not?

4. Is there anything that prevents you from using SC more frequently?

5. Are there any times of the year when you use Sc practices more often?

Barriers/Constraints

1. What prevents you from taking care of yourself to stay healthy?

2. What prevents you from taking care of your own illnesses?

3. What would better help you to stay healthy and take care of your own illness conditions?

Appendix 8 Interview and FGD Times and Locations

ID	Date	Location	Sex	Age	Menial Labour	Comments
FGD1	30.10.07	Chakaria	F	<50	Yes	Muhuripara
FGD2	4.11.07	Chakaria	F	>50	Yes	Muhuripara
FGD3	4.11.07	Chakaria	F	Both	Yes	Muhuripara
FGD4	5.11.07	Chakaria	F	<50	No	Muhuripara
FGD5	7.11.07	Domar	F	<50	Yes	Chikkon Mati
FGD6	18.11.07	Domar	F	<50	No	Chikkon Mati
FGD7	18.11.07	Domar	M	<50	Yes	Chikkon Mati
FGD8	20.11.07	Domar	F	>50	Yes	Chikkon Mati
FGD9	10.05.08	Domar	M	<50	No	Chikkon Mati
FGD10	12.05.08	Domar	M	<50	Yes	Chikkon Mati
FGD11	15.05.08	Chakaria	M	<50	Yes	Muhuripara
FGD12	16.05.08	Chakaria	Both	<50	Yes	Muhuripara
FGD13	17.05.08	Chakaria	M	<50	Yes	Muhuripara
FGD14	20.05.08	Chakaria	F	<50	No	Muhuripara
FGD15	04.06.08	Chakaria	F	<50	Yes	Muhuripara
Sub Total			**F10 M5**	**Elderly 2**	**11 Menial labour**	
Int1	30.10.07	Chakaria	F	<50	No	Muhuripara
Int2	30.10.07	Chakaria	M	>50	Yes	Muhuripara
Int3	31.10.07	Chakaria	F	<50	Yes	Muhuripara
Int4	31.10.07	Chakaria	M	>50	Yes	Muhuripara
Int5	31.10.07	Chakaria	F	<50	Yes	Muhuripara
Int6	4.11.07	Chakaria	M	>50	Yes	Muhuripara
Int7	5.11.07	Chakaria	F	>50	No	Muhuripara
Int8	18.11.07	Domar	F	<50	Yes	Chikkon Mati
Int9	20.11.07	Domar	F	<50	No	Chikkon Mati
Int10	20.11.07	Domar	F	>50	Yes	Chikkon Mati
Int11	16.05.08	Chakaria	F	<50	Yes	Muhuripara
Int12	17.05.08	Chakaria	M	<50	Yes	Muhuripara
Int13	17.05.08	Chakaria	F	<50	No	Muhuripara
Int14	17.05.08	Chakaria	F	<50	No	Muhuripara
Int15	18.05.08	Chakaria	F	<50	No	Muhuripara
Int16	19.05.08	Chakaria	M	>50	No	Muhuripara
Int17	19.05.08	Chakaria	M	>50	No	Muhuripara
Int18	20.05.08	Chakaria	M	<50	Yes	Muhuripara
Int19	3.06.08	Domar	F	<50	Yes	Chikkon Mati
Int20	3.06.08	Domar	F	<50	No	Chikkon Mati
Int21	4.06.08	Domar	F	<50	Yes	Chikkon Mati
Int22	5.06.08	Domar	F	>50	No	Chikkon Mati

Int23	6.06.08	Domar	F	>50	No	Chikkon Mati
Int24	6.06.08	Domar	F	<50	Yes	Chikkon Mati
Int25	7.06.08	Domar	F	<50	Yes	Chikkon Mati
Int26	7.06.08	Domar	F	>50	Yes	Chikkon Mati
Int 27	8.06.08	Domar	F	<50	Yes	Chikkon Mati
Int28	9.06.08	Domar	F	<50	Yes	Chikkon Mati
Int29	14.06.08	Domar	M	<50	Yes	Muhuripara
Int30	14.06.08	Chakaria	M	>50	Yes	Muhuripara
Int 31	9.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 32	10.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 33	10.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 34	10.02.09	Chakaria	F	<50	No	Muhuripara
Int35	10.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 36	10.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 37	12.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 38	12.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 39	12.02.09	Chakaria	M	<50	No	Muhuripara
Int 40	13.02.09	Chakaria	M	<50	Yes	Muhuripara
Int 41	13.02.09	Chakaria	M	<50	Yes	Muhuripara
Int 42	14.02.09	Chakaria	M	>50	Yes	Muhuripara
Int 43	14.02.09	Chakaria	M	<50	Yes	Muhuripara
Int 44	14.02.09	Chakaria	M	<50	Yes	Muhuripara
Int 45	18.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 46	18.02.09	Chakaria	F	<50	Yes	Muhuripara
Int 47	18.02.09	Chakaria	M	<50	No	Muhuripara
Total			**F21 M9**	**Elderly 11**	**Menial Labour 19**	

Appendix 9 Example of Interview Transcript

- Date: 09/02/2009 (Interview 31)
- Location: Muhuripara – Interview took place inside participant's house
- Participant: One female – poor – menial labourer

Interview duration: 25 minutes

I: We are from Cholera hospital; we have a project for some research. We want to know when you have been sick and what you do at first to treat yourself. We know that when you re sick many people visit the doctor or a traditional healer, but before you visit them if you treat yourself we would like to know about what it is you do. For example some of us treat stomach pain or a cold through using some types of leaves. We have spoken to other people in this area who do this. Some of us try this but some of us visit the doctor so we also want to know how much this costs and which doctors you visit and why. We also want to know if these treatments work or don't work or if you have had any bad experiences. Yesterday we spoke to some men who said that they know of any bad experiences but we kept talking to them and some bad experiences came out in their stories. We also want to know about the knowledge you have about these self-treatment practices, where you get it from and who you share it with. And when you use self-care do you feel that it works and if you had more support it might be better. So we are interested to know your thoughts about this as well. Sometimes when I ask about this people say they don't know anything but if we talk about it for a while people start to talk about it and say oh yes we do self-care. So this is what we want to discuss, if everyone is happy about that then lets start the discussion. So now that I have explained things I would like to ask when you are sick do you do something on your own to take care of yourself? What do you call this?

Then we go to the dr, but if we are suffering from sneezing and fever we try to take care of ourselves. If we feel good we don't go to the doctor, but if we don't feel good then we go to the doctor, we take the prescriptions and the medicines and we get cured.

Q. What do you call this action of taking care of your own health without seeing a dr?

Neejer Chekessa, at first we try ourselves before we go to the doctor, if we don't feel good then we go to the dr.

Q. Why do you take care of yourself first?

We try to get cure our self, if we are not cured then we go to the doctor. If we have minor problems like sneezing or fever, bad headache we try to care ourselves, but if it is a major problem then we go to the doctor. Can we deal with major problems ourselves? No we can't, so we go to the doctor.

Q. Has anyone in your house been ill recently, in the past two weeks?

Yes my mother in law is ill now, she is still very sick, her treatment is on going

Q. How did you treat her?

At first we took her to the dr.

Q. What do you do if you or someone in your family is suffering from diarrhoea?

We buy flazyl or saline from the shop or pharmacy. If we don't get a good result then we go to the dr.

Q. Do you know about how much flazyl to take?

It takes two to three medicines to get cured. Then I don't take anymore. I drink oral saline along with it, after all that if I don't feel any good result then I go to the doctor.

Q. Do you know it takes either one week or ten days to complete the course?

No I didn't know that, actually I took more flazyl when I was very sick.

Q. Where did you learn about using this method and taking this number of medicines?

From my neighbour, from my father, from my mother. Sometimes our neighbour told us to take flazyl as a cure and to go and get some from the shop.

Q. Does the type of treatment you use to treat yourself differ depending on the type of diarrhoea or if you have dysentery?

Yes it can change

Q. Why do you alter the type of treatment and what do you do?

When I feel less problem I tried to get cured at home by myself but if it is more then I go to the dr.

Q. What do you regard to be forms of self-care?

If I don't have enough money to go to the doctor I try to manage somehow in my home, but if I don't have enough money then I go to the doctor. If I don't have enough money whom should I ask to give me the money to go to the doctor? That's why I have to treat myself.

Q. Does it take time to prepare any self-care methods you use to treat yourself. Do you use any natural remedies?

Yes one day I was feeling pain in my belly I couldn't treat myself because my husband had brought some fish and I had to prepare the fish, so it took up a lot of time. The I felt more pain. I tried to hold my belly all day but I couldn't take any steps to take care of myself. The it was nine or ten at night and the pain got worse, the neighbour brought some leaves, mashed them up and I ate them. They then made some syrup and I drank it and then someone came and did Jar Fuk on me, but nothing helped me. The I realised that yes I had to go to the doctor, but it was the middle of the night, there was no vehicle and I couldn't go. I lied all night on the floor I was just suffering a severe pain in my belly. I put some hot water in a bottle and put it on my belly. I was about to die with the pain, someone told me if I stayed in the cold I could die with the pain so I went to sleep under a blanket but that didn't work either! Sometime later I felt sick and then I started vomiting then at last it was morning someone gave me some oral saline from the shop. The next day I didn't take any food and I still felt the pain in my belly, things finally go t better the next day after I spent all day resting on the floor, finally I was cured and the pain was gone.

Q. How long does it take to prepare some of these self-care remedies?

Someone gave me malaria leaf and mashed it along with gurup bark, mashed it and took it as a syrup. It doesn't take much time to prepare it, but it takes time to find it, sometimes it takes time to prepare it.

Q. Is there anything that would stop you from using this type of self-care again?

Sometimes we get good results sometimes we don't

Q. Are you able to easily access the resources, the natural resources you need for some of these herbal remedies?

Nowadays we don't find much, in the past we could get the necessary resources, but now it is difficult to find those.

Q. What are the best types of self-care?

Yeah we tried to get cured when we are suffering fever or diarrhoea we use malaria leaf or bark from the kurup tree.

Q. Do you think that more people should use self-care, or do you prefer them to go to the doctor?

I prefer them to go to the doctor, because nowadays people don't find the natural resources they don't find a good result, they don't find a cure.

Q. Does your use of self-care sometimes differ?

Sometimes we alter, sometimes we take different kinds of self-care for the same illness depending on the natural resources and sometime money matters.

Q. Do you think there are any risks associated with using self-care practices and herbal remedies?

Yes

Q. Can you tell us what they are?

Yes sometimes we don't get a good result

Q. So why do you keep trying to use it?

From my side if I don't get a good result then I won't continue it. If they don't see any good result then they go to the shop

Q. Are you more likely to use self-care or visit the doctor when the floods are here in this place?

Yes the problem increases, we fall sick more and we go to the doctor, then we don't take care of ourselves on our own

Q. Have there ever been any occasions when your use of self-care has been unsuccessful or even been detrimental to your health?

Sometimes we get good results, sometimes we don't, for example I don't get good result when I took syrup of karup bark and leaves.

Q. If got sick here in this place how much would it cost to get treatment and the travel costs?

It will take 40 tk to go and come back from the hospital. The cost of the medicine will depend on the type medicine and the type of illness.

Q. Are you interested in taking more responsibility for treating your own illnesses?

First I will try my best, but if I fail then I will go to the doctor. Actually we don't have enough money so we can't go to the doctor.

Q. Which do you prefer, self-care or going to the dr?

I prefer the doctor

Q. Does anyone help you in your use of self-care?

Yes I get help from others, if I get sick I can't prepare myself so people around me help me

Q. What do you need to be able to use more self-care more effectively, do you need some form of external support?

No….no I'm happy taking 2 or flazyl I need not take the full course. I get assistance from my neighbour to get the medicines prepared from the leaves.

Q. Do health practitioners support your use of self-care?

I go to them, yes they support and appreciate my self-care practice

Q. Are there any self-help groups here in this place?

Yes the pregnant women get help from them, they can provide medicines to us.

Q. What were the outcomes on your health through the use of self-care when you were last sick?

First we try ourselves, when we don't get a cure or a good result then we go to the doctor.

Q. If the situation gets worse up to which level do you wait until you see a doctor?

Yes sometimes we feel severe pain then we go to the doctor

Q. Are there any occasions when using self-care is the wrong choice, or inappropriate?

Sometimes I make the wrong choice to take care of myself but sometimes not and I get cured

Q. Do you have any experiences of when self-care has been a good choice?

Yes I have, I take leaves as medicines and get cured I get relief from pain. If I'm suffering from fever or from a bad headache then I use it, but I don't have any bad example (laughter)

It takes 40 taka to go to the doctor and come back. 10 or 20 taka for buying paracetamol, if I find any vehicle easily it takes ten minutes to go there but sometimes we don't find a vehicle easily.

Q. Where did you learn SC?

My mother, father, grandfather and grandmother

Q. Do you want more knowledge on self-care?

Well it would be good for us

Q. Do health practitioners tell you about other self-care practices?

No one comes here

Q. Will you pass on your knowledge about self-care to others?

Yes

Q. Who to?

I will tell my children and my family, it is important that they have this knowledge and are able to look after themselves and their own children as well

Q. Do you feel confident in your use of self-care?

Sometimes I can depend on this practice sometimes not

Q. How confident are you that you have the knowledge and understanding to treat your own illness?

Its not that we don't take any suggestions from the doctor, sometimes we go there and get prescriptions from that moment we try to follow the prescription of we feel the same problem. But if we don't get cured then, then we go to the doctor.

Q. What impact would greater guidance from the doctor have upon self-care?

Yes greater guidance and support could impact greatly on us

Q. Do you feel confident to discuss your health problems with the doctor?

Yes I tell them every health problem

Q. Do you tell the doctor about your use of self-care?

We only go to the doctor when the situation is serious, but if we say we have tried something at home or I waited to see the doctor they will scold me, so I didn't say anything, that's why I don't tell.

Q. Which kinds of medicines do you take without consulting the doctor?

Like fever, sneezing, bad headache I go the pharmacy to take a medicine. We take paracetamol for fever or pain, for diarrhoea we take saline and flazyl, we don't take much more than this.

Q. Have you ever consulted a traditional healer when you have been ill?

Yes, first we consider about the minor illness, taking medicines from them, but if it doesn't work then we go to the doctor.

Q. Why do you sometimes visit traditional healers?

They are usually available, but we prefer to go to the doctor.

Q. Do health practitioners support your use of self-care?

If I don't reach a serious level then the doctors don't accuse us of doing any self-care, if we are well and the report is ok then the doctors don't say anything to us

Q. When is the nest time to use self-care when you are ill?

No I don't wait much at first I just go to the doctor. At first we try to get cured with the medicines we know after that we go to the doctor. If we are suffering from diarrhoea we can take care of ourselves through oral saline and flazyl but other cases we go to the doctor.

Q. Do lots of people do this type of self-care for diarrhoea?

No because we can't help with our health, so we go to the doctor to take care of our health.

Q. Is there anything that prevents you from using self-care more frequently?

If I feel bad taking self-care and experience anything bad then we go to the doctor instead of taking self-care

Q. Are there any times of the year when you use self-care practices? For example during floods there is more illness.

No, there is more illness during the floods so we try to get cured on our own, the rest of the year we remain ok

Q. What prevents you from taking care of yourself to stay healthy?

No I can't take care of my health always. The main problem is our financial status, because we don't have much money we face problems taking care of our health.

Q. Do you have any questions for us?

No nothing, but we need the doctor, we prefer to visit the doctor. Sometimes we try to manage money but who will take us, that remains the main question.

Int: Thank you very much for your time, if you do not have any further questions we will end the interview and I will play the recording back to you if you would like.

Appendix 10 Example of Focus Group Discussion Transcript

- Date: 15/05/2008 (FGD 9)
- Location: Muhuripara – Interview took place outside one FGD member's house.
- Participant: Six male – poor – menial labourers
- Interview duration: 70 minutes

I: Some of you may know what we are doing but some of you may not. We are from Cholera hospital, we have a project for some research. We want to know when you have been sick and what you do at first to treat yourself. We know that when you re sick many people visit the doctor or a traditional healer, but before you visit them if you treat yourself we would like to know about what it is you do. For example some of us treat stomach pain or a cold through using some types of leaves. We have spoken to other people in this area who do this. Some of us try this but some of us visit the doctor so we also want to know how much this costs and which doctors you visit and why. We also want to know if these treatments work or don't work or if you have had any bad experiences. Yesterday we spoke to some men who said that they know of any bad experiences but we kept talking to them and some bad experiences came out in their stories. We also want to know about the knowledge you have about these self-treatment practices, where you get it from and who you share it with. And when you use self-care do you feel that it works and if you had more support it might be better. So we are interested to know your thoughts about this as well. Sometimes when I ask about this people say they don't know anything but if we talk about it for a while people start to talk about it and say oh yes we do self-care. So this is what we want to discuss, if everyone is happy about that then lets start the discussion. So now that I have explained things I would like to ask what do you usually do when someone gets sick?

P1: About 15 years ago ICDDR,B started working here most of the people were suffering from diarrhoea. ICDDR,B asked the people what do you do when suffering from diarrhoea and we said that we don't know what to do. So they told us when you have diarrhoea not to go to the doctor but at first to try the saline. ICDDR,B taught us how to make the saline because at that time the packet saline was not available. They taught us to make the saline, at first you have to wash your hands thoroughly and then make the saline with sugar, salt and water, pinch of salt, one handful of sugar. But if you don't have sugar you can use gur (type of sugar). ICDDR<B asked at first to try this saline, if it doesn't work then try to give the patient chaler bori (mashed rice mixed with water and boiled, type of soup and eaten). But they also said that if you don't have the ingredients for saline then try to make chaler bori first rather than going to the doctor.

I: Were there many occasions when you didn't have the ingredients to make the saline?

P1: If sugar and gur were not available then rice is available all the time so it is always possible to make the chaler bori.

I: You are talking about 15 years ago, but now packet saline is available so do you still use these methods?

P1: Yes we still use these methods for the home made saline

I: When you take saline and its not working how long do you wait before seeking other treatment options?

P1: If the patient got diarrhoea in the night then you can't go to the doctor so usually we make the saline and then take them to the doctor in the morning.

P3: The home made saline works most of the time and if it doesn't work then we usually go to see the doctor

I: Which doctor?

P1: The government hospital

I: How much do you have to pay if visiting to get treatment for diarrhoea?

P1: It doesn't cost anything to visit but then you have to buy the saline from outside

I: How do you travel to the hospital?

P1: If its not too serious then we will take a rickshaw, but if its very serious then we take a taxi. It's about 50 to 100 taka for the taxi.

I: This man has explained his experience; does anyone else have a similar experience they would like to discuss?

P3: I remember back when ICDDR,B started working here and they were telling everyone why diarrhoea happens you know because of uncleanliness and other things and helping everyone to have knowledge about how diarrhoea is caused. You have to wash your hands, you have to be clean, you have to wash you hands very well when you come back from the bathroom. In that time some people knew this information about keeping clean and washing hands.

I: So who knew about this and which people didn't know?

P3: Some people knew about it and some people didn't know. Who knows about it makes the saline, the ones that don't know visit the doctor. When they go to the doctor they say they have this type of illness and then the doctor gives them the medicine and they buy it. The doctor also says if you have this disease you have to do this and if you have that disease you have to do that.

I: Which doctor is this?

P2: It's the pharmacist at siculcutta, they are not MBBS, they don't take visits like the MBBS doctors and they don't treat patients like the MBBS doctors.

P4: Usually we visit them and they know us very well so why would they take a visit from us? What we usually do is we go to them and explain my brother is suffering from fever, so what should I do? So the doctor suggest take this medicine and give it to your brother, if it doesn't work then I can take him to the doctor in Charinga.

I: Has this example where you tried the medicine and it didn't work ever happened?

P4: Yeah when it doesn't work the pharmacist says I should bring the patient to him so he can look at the patient and recommend which doctor we should go to in Charinga. But the medicine from the pharmacist usually works.

P1: Its not necessarily true that if you go to the specialist doctor you will get better treatment than the smaller doctors (less qualified). Sometimes the smaller doctors treatment is better than the expert doctors, it depends. For example an MBBS doctor is treating us for a long time and it is not working, but if I take the patient to a less qualified doctor his treatment will work.

P3: For MBBS doctor they usually want the patient to be treated step by step, they don't want to give very strong medicines so that he will be strong again within 2 or 3 days. But the tuk-tuk doctor (les qualified Dr.) will give a very strong medicine so we will be ok within 2 or 3 days.

I: So which one do you prefer?

P2: We prefer the MBBS doctor, but if you can take the time to visit them, so for immediate treatment we go to someone who knows better than me.

I: Maybe this is a personal questions so you don't have to answer it, you are talking about the fact that it takes time and its far way but is it also related to money?

P1: Yes this is true, if we want to visit the doctor in town we need 200 to 500 taka, so if we don't have this money what should we do. If we go to the village doctor even if we don't have any taka then they will give at least two tablets.

P5: We don't have any other options so we just do it, we don't have money but we are sick so if we can get two tablets it can give us immediate relief.

I: Has anyone in your family been ill in the last month?

P1: No I don't think so.

I: Do you try any treatment yourself before going to the doctor?

P4: Yeah I remember our parent and elders they know better. I don't usually use my treatment in the home, I have seen my father though, he used to use this kind of herbal treatments and medicine.

I: Do you discuss this type of knowledge with other neighbours, if someone is sick do you suggest a traditional method to use?

P2: We have this discussion and tell them what to use.

P4: It's the older generation I have seen them use this kind of medicine

P3: Bashok pata and pouri pata are good or treating a cold, but you can also use garlic. If you can eat it it can cure a cough problem.

P2: Garlic mustard oil and salt mixed together make it hot and then eat it.

I: If you have a cold you can drink one spoonful of mustard oil which can provide some relief

P1: Yes if you take mustrd oil and garlic and massage it into your neck it can be helpful.

P5: Yeah I do the same, some people eat the garlic some people do the massage.

P1: In our area if someone has a cold or tonsillitis you can apply honey to your neck, it works very well.

P3 But if it doesn't work then we visit the doctor.

I: How many times do you use it when you are sick?

P1: Once or twice a day

I: Who uses this type of medicine?

P1: Our neighbours use this, I have seen them

I: How long do you wait to see if it the treatment has worked?

P1: If I have the problem today I will try the honey but if it doesn't work by tomorrow then I will visit the doctor.

I: You mentioned that the older generation use self-care, are these self-care treatment less now and if so why? Yesterday we spoke to someone who had a medicine plant in his home

P2: Yeah here we have some nim trees if we have skin problems or itching problems you can boil the leaves in water and apply to the skin so we still have this type of practice.

I: How often do you use this?

P2: It takes four or five days

P1: Arjun gas (tree), this tree you have to use the bark if you have back pain. You do this once a day for three days. You mash up the bark and put it on you back so that it sticks on like a paste and you have to do this for two or three days.

P2: For skin disease you have to use nim pata and if your skin is burned you have to use rajulla pata. If you have stomach pain you can eat mango leaf with a little salt

I: Do you still use these types of practices?

P2: Yes we still use them, we use this ourselves and sometimes suggest it to our neighbours.

I: Which do you prefer between the doctor and the self-care practices?

P2: At first we try ourselves. Usually we try first and if it doesn't work then we visit the doctor. Usually t first we use out knowledge, but if it is not working we visit the doctor.

I: So at first you try yourself, doe the self-care practice you use work very often?

P2: Yeah it works a lot of the time, I prefer the self-care methods

I: Do you want to learn about more self-care

P2: Yes I would like to, if someone teaches us we would love to learn more.

I: If government services were free and good quality what would you prefer to do self-care or visit the doctor?

P2: We would at first try ourselves, it will help us save the money. If we are going to the doctor we will need at least one day so if we can treat ourselves we will save time and money. If we go to the hospital we have to wait in the queue so it takes time.

I: Are the ingredients you need to use self-care widely available?

P4: Yeah what we need is usually available.

I: For example there used to be some plants that were widely available in the past which you can't get anymore. Do you know of anything like this?

P2: Yes the dongolash tree, it was very much available but nowadays you don't see it. It was very useful if you have breathing problems. You take the juice from the white flowers which tasted very sweet.

I: When was this available?

P2: About two or three years ago, but now we don't see it.

P4: Thonzer dana (type of seed) this is used for wind problem, you put in water at night and then drink it during the day. It really works well, about 95% of the time.

I: Where did you learn about this?

P4: Sometimes you learn about this from the kabiraj. Specifically for the thonzer dana I have seen this used by my grandparents, parents and elder brothers. But when we can't identify the disease and we can't understand the sickness then we go to the doctor.

I: When you visit the doctor do you inform them that you have tried methods at home first?

P2: Yes we tell them, they normally ask if we have tried a treatment.

I: What if the doctor forgets to ask?

P2: No they usually ask, doctor usually says that these medicines are not the best, that they are for the older generation. They say we should use better medicines and ask why we use these self-care methods.

I: So you know the doctor has this opinion but you still practice self-care?

P2: Yes

I: Why does the doctor say this?

P2: They say it might not work

Participant demonstrates the use of thonzer dana, the process of making it and then drinks the mixture

P3: This really works you know, its very very good.

I: Have you ever tried this?

P3: I don't have this illness so there is no need for me to take it, but if I get this illness then I would use it because I believe it will work very well

I: Where are the seeds normally found?

P2: They are from the hillside

P3: Even if you don't have this disease if you drink this one its good for your health.

P2: You know I had this stone problem and I went to see the doctor and they said I needed to have an operation. Before visiting the doctor I had a problem, I wasn't able to urinate for the whole day so I went to the doctor. The doctor told me to take an x-ray at Zam Zam, this cost 200 taka. This happened five or six months ago. Doctor saw that it was a stone problem and said I should go for an operation within seven days at Chittagong medical hospital. It was supposed to cost me 20,000 taka. So I cam back because it was a lot of money. Before going to the doctor I used to drink this thonzer dana, so I continued to take this drink, after seven days at night when I went to the toilet I felt something was coming out. I got a torch and I saw that the stone was coming out. I showed everyone, the neighbours the people at the tea stall and doctor Nazma (ICDDR,B Dr).

I: What did the doctor say?

P2: She was very happy for me and told me I should keep drinking the thonzer dana. When the doctor suggested to take the operation and I didn't have the money I thought I would use my own knowledge and drink the thonzer dana.

I: How much did it cost?

P2: The x-ray was 200 taka and visiting the doctor was 400 taka.

I: How do you know what came out was the stone?

P2: I was feeling it, I could feel the stone coming out so I knew this is what it is. Because of the pain I knew this was the stone.

I: Before we were talking about the dogolash tree, why do you think this is not available anymore?

P2: I don't know, maybe its because of the fertilizer that is use this is poison and can kill the plant life. Two or three years ago we used the fertilizer in less quantity, but now we use more of it, so maybe this is the reason. This dongloash also used for treatment for gastric problems and gastric ulcer. You take honey, turmeric and juice from the dongolash leaf and dukker ghas (type of grass) mix it together and take it two times a day for one month. I have see my own father drink this juice.

I: Do you think the next generation will also use this type of treatments?

P4: Yes they will also use it

P2: No I don't think that will happen

I: You say that the elders use self-care more than your generation, how can you say that the next generation will use self-care?

P2: Maybe they will not get the leaves or the seeds they need. The dongolash is already not available so the same ting can happen to other leaves and seeds. In the past we have seen that this was available and now it is not so the same thing can happen. For example if we have skin disease with spots I know a leaf, I can't remember the name, if you put the leaf on the spot it will make it disappear, you have to hold the leaf on the spot so that it won't fall.

I: Is this available?

P2: Yes it is available round here. If you have a cut you can use ashom lota. Another treatment is the this bark from the banana tree, just shave the white part of the bark out and use this because it will immediately stop the bleeding. There is another medicine where you are working in the field you have to spend hours in the water, so we find fungus around our legs so we use latum gola (fruit). We burn this so it becomes soft and then apply it to the affected areas. This works very well and you just have to use it once.

I: If you have boots it might prevent the problem

P3: Yeah I work in the fisheries and they give us boots and clothes to protect. It was a foreign company so they were very careful about this type of thing, but the Bangladesh government they won't do anything like this

I: Do you know anyone who prefers to go to the doctor without using any self-care first?

P1: Some people do that but in Bangladesh people have no money so they prefer to use the home methods and self-care. People who have affordability they usually prefer to go to the doctor.

I: Which do you prefer?

P2: We prefer the self-care because we are using our own knowledge.

P4: For skin irritation you can use sonalu pata, mash it and then apply it to the skin. I have used this and this medicine works very well

I: Do you get any support from any organisations?

P1: No

I: Okay we have asked you a lot of questions, do you have any questions for us?

P2: Yes I have, what will I get from this discussion?

I: This is a common concern, you have a lot of knowledge and it would be good if you can keep using these methods and use your initiative to grow more plants to help protect availability. We will use this information to write a report and let people know who works in health to help improve this kind of knowledge and the health process. It might take a long time. But please consider that there is a lot of processes to go through. It depends on other people involved in the health system, but we will inform those people with influence to try and support these types of health knowledge for the better. This type of research will gather the information to inform others, we don't want this local and indigenous knowledge to disappear or be lost. So it will be awareness building about this knowledge and looking to support you. Are you happy with that? I am very happy to answer any further questions you have.

P2: Okay I understand, I think this is a good work and it is important for the people hear. Can I hear my voice on this machine? (laughter).

I: Of course, if there are no further questions I will stop the recording and play the tape so everyone can hear what they have said to me.

Appendix 11 Health Security Questionnaire

A collaborative study of
ICDDR,B and Northrumbia University

(Unless otherwise instructed, please circle the appropriate answer code)

Serial number of the questionnaire:			

SECTION I:

Identification								
1. Study site		2. Study village				3. Name of head of household	4. Serial no. of household	5. Para
Matlab	1	Village	1	Village	2			
Chakaria	2	Village	1	Village	2			
Nilphamari	3	Village	1	Village	2			

6. Name of the participant: _____

Consent

We are from ICDDR,B (Cholera *Haspatal*) Dhaka. We are here in connection with our research on disaster and health. The main objectives of our research are to understand the hazards associated with various disasters, measure you take to avoid hazards, how health and health related factors affects outcome of disasters, and the coping strategies you adopt in case of experiencing a disaster. We would also like to know about socioeconomic and demographic characteristics of the members of your household. The interviewing will take around 30 minutes of your time. The findings from this research will be helpful in preparing policies and programmes to reduce the adverse effects of disasters on the population from the disaster prone areas. You may or may not agree to participate in the study. You are also free to stop participation at any time during the interview. All the information provided by you will be kept confidential and will be used for research purposes only. Research findings will be reported in a manner that your identity will remain unknown. If you have any question in relation to the study you can contact Mr. M. A. Salam of ICDDR,B by calling him at (tel no.) or Abbas Bhuiya at (tel no.). Please also note that we are not in a position to compensate you in any manner (cash or kind) for your participation in the study.

Do you have any question to ask?

Are you willing to participate? Yes / No ------→ stop interviewing

Name of the Interviewer _____ Signature of the Interviewer: _____

Name of the Supervisor _____ Signature of the supervisor: _____

Date of interview: _____

SECTION II: Household information

1. Household members (sharing same kitchen, members spending at least one night per month, new members living for at least six months) (do not read the list)

Sl No.	Name	Relationship with HH	Sex (M/F)	Age	
1 (Head)				Year	Month
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Occupation Code:

Agriculture
Own land -- 11
Sharecropper -- 12
Leasing in land -- 13
Leasing out land -- 14

Job formal
Teacher – 15
Govt job-16
Official in private or NGO sector – 17
Retired-18
Children------50
Elderly(dependent)-51
Disable--------52
Others----19
(specify…..)

Manual labour
Rickshaw puller -- 20
Van puller -- 21
Fishing for employer -- 22
Boatman – 23
Soil scaling-24
Agricultural labor-25
Day labour-26
Others-27
(specify…..)

Self-employment (business)
Business large – 28
Business small – 29

No gainful occupation
Household work--30
Student -- 31
Unemployed – 32
Others----------33
(specify…..)

Marital Status Code:
Married -- 61
Single --62
Widow/widower--63
Separated –64
Divorced – 65
Abandoned-66
Others-----67
(specify…..)

Education:	Relationship with HH:			
S.S.C---41 H.S.C- 42	Household head-01 Wife-02	Nephew (sister's son)-17 Niece (sister's daughter)-17 Lodging Master-18 Adopted son-19	Spouse of nephew-33 Foster father-34 Husband-35	Grand son's/daughter son-44 Grand son/daughter's daughter-45 Sister in laws(husband's

BA/B Com/B.S.C-43 M.A/M.Com/MSC-44 MBBS-45 Phd/higher degree-46 Can sign name-47 Illiterate----------48 Others--------49 (specify…..)	Son-03 Daughter-04 Father-05 Mother-06 Mother in Law-07 Father in law-08 Domestic servant (boy)-09 Domestic Servant (girl)-10 Sister in law-11 Nephew (brother's son)-12 Niece (Brother's daughter)-13 Daughter in law-14 Brother-15 Sister-16	Adopted daughter-20 Brother in law-21 Sister in law (wife's sister)-22 Grand child 23 Religious teacher (hafez)-24 Sister in law- 25 Son in law-26 Step mother -27 Daughter in law(wife of the adopted son)- 28 Step brother/sister-29 Step son/Daughter-30 Grand parents-31 Spouse of grand children-32	Brother in law (sister's husband)-36 Aunt (mother's sister)-37 Spouse of nephew (Sister's son's wife)-38 Uncle (mother's brother)-39 Brother in laws wife-40 Brother in law (husband's brother)-41 Husband's another wife- 42 Cousin sister-43	sister)-46 Sister in laws daughter-47 Sister in laws son-48 Aunt (father's sister)-49 Cousin brother- 50 Son's or Daughter's parents in laws (*beai/Bean*)-51 Aunt (mother's brother's wife)-52 Employee-53 Aunt in law-54 Others-----55

Name of the participant:

2. Member number of the participant: (as per the above list)

M	F

3. Does the household or any member of the household own the following? (Pls. Read the list)

Item	Yes	No	Item	Yes	No
1. Radio	1	2	7. Bed (*khat*)	1	2
2. TV	1	2	8. simple bed (*chouki*)	1	2
3. Table	1	2	9.Telephone/cell	1	2

			phone		
4. Chair	1	2	10. Watch	1	2
5. Quilt	1	2	11. Toilet	1	2
6. Mattress			12. Tube-well		

4. Amount of land owned by the household:

			Amount of land
Home stead plot	Yes-1	No-2	Not applicable
Amount of Cultivable land (in local unit)	Yes-2	No-2	

5. What are the main sources of your drinking water during various seasons of the year? (pls. Don't read the list)

Source of water	Dry season ()	Rainy season ()	Winter ()
Tube-well	Yes – 1, No -- 2	Yes – 1, No -- 2	Yes – 1, No -- 2
Pond	Yes – 1, No -- 2	Yes – 1, No -- 2	Yes – 1, No -- 2
River	Yes – 1, No -- 2	Yes – 1, No -- 2	Yes – 1, No -- 2
Canal	Yes – 1, No -- 2	Yes – 1, No -- 2	Yes – 1, No -- 2
Ditch	Yes – 1, No -- 2	Yes – 1, No -- 2	Yes – 1, No -- 2
Rain water	Yes – 1, No -- 2	Yes – 1, No -- 2	Yes – 1, No -- 2
Others, Specify……..	Yes – 1, No -- 2	Yes – 1, No -- 2	Yes – 1, No -- 2

6. Do you have a fixed place for defecations?

Yes	1	
No	2	If no, go to Q12

6. Type of the toilet (please don't read the list)

Characteristics of the toilet	Code
Septic tank	1
Slab/ring with water seal intact	2
Slab/ring with water seal broken	3
Faeces drained to canal/ditch/ Hanging toilet	5
Not applicable	6
No reply	7
Other, Specify …….	8

7. Access to the health facility: If you or someone at your home get sick, usually where do you or they go? (Read the list) (more than one answer applicable)

Facility	Yes=1 No=2	Distance Km Distance In local unit	Time in minutes	Transport (mention any of the transport, the one you use more) Car= Rickshaw= Walking=	Cost of travel – by cheapest means in Taka
Union Health & Family Welfare Centre	Yes=1 No=2				
Upazila Health Complex	Yes=1 No=2				
District Hospital	Yes=1 No=2				
Allopathic pharmacy	Yes=1 No=2				
Allopathic Doctor with formal degree	Yes=1 No=2				
Homeopathy doctor (formal degree)	Yes=1 No=2				
Village doctor	Yes=1 No=2				
Private clinic	Yes=1 No=2				
Icddrb hospital/other NGO hospital	Yes=1 No=2				
No Access	Yes=1 No=2				
Other, Specify …….	Yes=1 No=2				

SECTION III: Migration

1. A) Have you been living in this location of the household since your birth?

Yes (if yes, please go to question 3)	1	No	2

B) If no, for how many years have you been living in this location?

		Years
		Months

C) Where did you live before coming here? (Pls. Don't read the list)

Place	
1. Another location of this village	
2. Another village	
3. Another union	
4. Another upazila	
5. Another district	
6. Big city of divisions	
7. Another country	

1. Another country	1
2. Another upazila	2
3. Another district	
4. Another union	3
5. Another village	4
6. Another location of this village	5
7.	
8.	

2. What was the main reason for your moving here? (Pls. Don't read the list) (more than one answer applicable)

Main reasons	code
1. Joining my spouse	1
2. Protection from calamities	2
3. Better opportunities of job and livelihood	3
4. Due to the service/job	4
4. Unfavourable employment/livelihood conditions at origin	3
5. Strongly attracted to this location for employment/livelihood	4
5.. For education	5
6. Divorce/separation	6
7. Did not want to respond	7
8. Others, Specify:…….	8

3. Have any of your household members left this house in last five years?

Yes	1
No	2

4. How many of your family members who lived at this house have left the village during the last 5 years to live elsewhere?

Male	Female	Total

5. Particulars of the out-migrants, reasons for migration and destination

						Where the family members went?						
Sl. no	Name	Age	Sex	Relationship with head of the household	Reason for leaving To marry = 1 To live in a safer place = 2 To escape poverty = 3 To work / seek work = 4 Other = 5 *(specify in box)*	Within the same village	To another village in the same union	To a village in a different Union	To a village in a different Upazila	To a village in a different District	To another division	To another country
1												
2												
3												
4												
5												
6												

Name	Relationship with head of the household	Reason for leaving To marry = 1 To live in a safer place = 2 To escape poverty = 3 To work / seek work = 4 Other = 5: *(specify in box)*	Where the family members went						
			Within the same village	To another village in the same union	To a village in a different Union	To a village in a different Upazila	To a village in a different District	To another division	To another country

SECTION IV: Hazards, Disasters and Coping

Read: Disaster can occur in many ways and for many reasons. They are not just environmental events.

1. Have you ever experienced any of the following? (*Read all categories*)

List of Hazards and Disasters	2. Please indicate in order of impact the three that had the greatest effect on your life 1 = greatest impact 2 = second greatest impact 3= third greatest impact
1. Drought / shortage of rain Yes -- 1 No ---2	
2. Excessive / continuous rain Yes – 1 No ---2	
3. Water logging Yes – 1 No ---2	
4. flood/ Flash flood Yes -- 1 No ---2	
5. Hail storm/ Yes -- 1 No ---2	
6. thunder Yes -- 1 No ---2	
7. Cyclone/ Windstorm / storm / strong wind Yes – 1,No -2	
8. Cold wave Yes -- 1 No ---2	
9. Heavy fog Yes -- 1 No ---2	
10. Plague of pests Yes -- 1 No ---2	
11. Inflation that causes destitution Yes -- 1 No ---2	
12. Civil unrest / hartal Yes -- 1 No ---2	
13. Death of family member Yes -- 1 No ---2	
14. Ill health Yes -- 1 No ---2	
15. Fire Yes -- 1 No ---2	
16. Crime Yes -- 1 No ---2	
17. Get involved in legal problems Yes -- 1 No ---2	
18. Road Accident Yes -- 1 No ---2	
19. Divorce Yes -- 1 No ---2	
20. Severe family breakdown Yes -- 1 No ---2	
20. Other ……	

2. The **three** greatest impacts identified	Did it occur in last 1 year? How many Times?	What did it cause? (Circle more than one if applicable) (Pls. read the list)	Who/what helped you most in surviving the events at that time? (multiple answers allowed) write **code:** (do not read the list)	What did you to cope to the disaster situation? (Pls. read the list)
Event Ranked Greatest Impact (1) from Previous Table (write it in your hand)	Yes ---- 1 No -----2 ----- times	1. Children could not go to school, 2. Caused damage to house 3. Loss of stored food 4. Damaged crop 5. Reduced income 6. Caused injury 7. Caused illness 8. Mental stress 9. Loss of life 10.Caused difficulties in moving around 11.Caused lodging problems 12. Food shortage Others, specify ……...	1. Neighbours 2.. Relatives 3. Friends 4. Government 5 NGO 6. Didn't get any help from anyone 7..others…… **Others,** Specify……	1.Reduced food intake 2. Moved out of the area some days 3. Reduced other expenditure 4.Went to the cyclone center 5.Went to the relative's house 6.Stayed on the road, dam or in the hilly area 7.Had loans with interest 8.Had loan without interest 9.Others…… 10.Others…….
Event Ranked Greatest Impact (2) from Previous Table (write it in your hand)	Yes ---- 1 No -----2 ----- times	1. Children could not go to school, 2. Caused damage to house 3. Loss of stored food 4. Damaged crop 5. Reduced income 6. Caused injury 7. Caused illness 8. Mental stress 9. Loss of life 10.Caused difficulties in moving around **11.Caused lodging problems** **12. Reduced food consumption** **13. Others,** specify ……...	1. Neighbours 2.. Relatives 3. Friends 4. Government 5 NGO 6. Didn't get any help from anyone 7..others…… **Others,** Specify……	.Reduced food intake 2.Moved out of the area some days 3. Reduced other expenditure 4.Went to the cyclone center 5.Went to the relative's house 6.Stayed on the road, dam or in the hilly area 7.Had loans with interest 8.Had loan without interest 9.Others…… 10.Others…….

Event Ranked Greatest Impact (3) from Previous Table (write it in your hand)	Yes ---- 1 No -----2 ----- times	1. Children could not go to school, 2. Caused damage to house 3. Loss of stored food 4. Damaged crop 5. Reduced income 6. Caused injury 7. Caused illness 8. Mental stress 9. Loss of life 10.Caused difficulties in moving around **11.Caused lodging problems** **12. Reduced food consumption** **13. Others,** specify……..	1. Neighbours 2.. Relatives 3. Friends 4. Government 5 NGO 6. Didn't get any help from anyone 7..others…… **Others,** Specify……	1.Reduced food intake 2.Moved out of the area for some days 3. Reduced other expenditure 4.Went to the cyclone center 5.Went to the relative's house 6.Stayed on the road, dam or in the hilly area 7.Had loans with interest 8.Had loan without interest 9.Others…… 10.Others…….

SECTION V: Early warnings, avoidance, and prevention of the consequences of disasters

1.1

1.How did you know about the disaster or which early warning have you received? (pls. Read the list), (more than one answer is acceptable) 1. Do you consider …….. (name each item) as an early warning of 1,2,3,4?	1. Flood/water logging/ flash flood	2. Cyclone/storm/ tornado	3. Drought/ no rain	4. Event ranked (1) for greatest impact in previous table (if different)
Hearing milking Hearing warnings from Red Crescent Volunteers	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times – 3	Yes ---1, No -- 2, At times - 3
2. Warnings from radio or TV	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
3. Message through cell phone from relatives or friends	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
4. Unnatural movement of animals/birds/insects	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
5. Observing water level	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
6. Observing weather change (winds, air, sky, sun-light, nature)	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
7. Predictions by the elderly	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
8. Word of mouth from the people around	Yes ---1, No -- 2, At times - 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
9. I have no way of knowing	Yes ---1, No -- 2, At times – 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
10. Others, specify…….	Yes ---1, No -- 2, At times – 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
11. Others, specify…….	Yes ---1, No -- 2, At times – 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1,No-2, At times - 3
12. Others, specify……	Yes ---1, No -- 2, At times – 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3
13. Others, specify……	Yes ---1, No -- 2, At times – 3	Yes ---1, No -- 2, At times - 3	Yes ---1, No – 2, At times - 3	Yes ---1, No -- 2, At times - 3

Avoidance of bad impacts of disaster

2. From day to day what protects you from the main disasters you identified as disrupting your life?
What could protect you from day to day life from the damages you face (or you have faced) due to the disaster that you have mentioned?

	Hazard Type Identified (skip column if it was not identified)			
	Flood /water logging/ flash flood	Cyclone/ storm/ tornado	Drought no rain	Event ranked (1) (as in earlier tables, if it is different from the mentioned ones)
1. Having money				
2. Having loans from the neighbours without interest				
3. Having loans with interest				
4. Not having disease				
5. Having good health				
6. Having job				
7. A peaceful life with less tension				
8. Having physical strength				
9.Having nutritious food				
10. Having good Sanitation facility				
11. Having a good water source				
12. Having access to PHC/Government hospital				
13. Using existing knowledge from the area/ knowledge from the elderly				
14. missing				
15.God's support				
16. Maintaining honesty				
17. Other, Specify ……				
18. Other, Specify ……				
19. Other, Specify ……				
20. Other, Specify ……				

3. What do you/would you do if you know that a (name the disaster) is occurring in less than an hour/in 24 hours/in few weeks? (Tick the applicable box(es)) a week time? (mark on the right box, more than one answer is acceptable, pls. do not read the list)

Action	When you think it will happen in less than an hour				When you think it may happen in less than 24 hours				When you think it may happen in next few weeks			
	Flood /water logging / flash flood	Cyclone / storm/ tornado	Drought no rain	Other Event Ranked Greatest	Flood /water logging / flash flood	Cyclone / storm/ tornado	Drought no rain	Other Event Ranked Greatest	Flood /water logging / flash flood	Cyclone / storm/ tornado	Drought no rain	Other Event Ranked Greatest
1. Stay at home/ do nothing	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
2. Send the children in safer place	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
3. Move out of the area	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
4. Go to cyclone/flood shelter	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
5. Store food extra safely at home	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
6. Shift food in a safer place inside/outside the home	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
7. Prepare food differently	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
8. Store safe/clean water	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
Install measures to protect water supply	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
9. Install measures to protect livestock at home	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
10. Strengthen the structure of the house	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
11. Send livestock in a safer place	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
12. Pray to God	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
13. Send cash/asset to a safer custody	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
14. Make boats	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
15. Others, specify…….	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
16. Others, specify…….	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2
17.. Others, specify…….	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No – 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No -- 2	Yes – 1 No – 2	Yes – 1 No – 2

Barriers against prevention

4. Could you and the other members of your household protect your health during the disaster?

Yes	1	No	2

5. Indicate which of the following **prevented** you from protecting your house against damage/securing livelihood/maintaining health?

Barriers against prevention of health from disasters	Protecting the house		Securing livelihood		Maintaining health	
Being a woman	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No - 2
1.Childcare	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No - 2
2. Sickness of any member including you	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No - 2
3. You or your family members' Physical illness	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No - 2
4. Physical Illness	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No - 2
5. Disability	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
6. Lack of food	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
7. Lack of money	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No - 2
8. Lack of employment opportunity	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
9. Lack of early warning	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
10.Lack of health service information	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
11. Lack of manpower in the family	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
12. Lack of access to healthcare	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
13. Damage of communication infrastructure	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
14. Lack of land	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
15. Lack of safe/pure water	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
16. Lack of sanitation	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
17. Unhygienic environment	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
18. Fear of being abused	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
19. Tension or mental stress	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No – 2
20. Because of rain and water	Yes - 1	No - 2	Yes – 1	No – 2	Yes - 1	No - 2
21. Because of cold	N. A	N. A.	Yes – 1	No – 2	Yes - 1	No - 2
22. Because of extreme heat	N. A	N. A.	Yes – 1	No – 2	Yes - 1	No - 2
23.Others, specify……..	Yes - 1	No - 2	Yes – 1	No - 2	Yes - 1	No – 2

SECTION VI: Health

1. Which health conditions did you or a member of your household experience since last winter?	Summer (Choitra-Arshin)	Rainy Ashar – Bhadro	Winter Kartik – Falgun	Which **three** had the greatest impact on your wellbeing in last one year? (1 for most important and 3 for least)
	How many episodes?	How many episodes?	How many episodes?	
1. Diarrhoea/cholera Self: Yes – 1 No – 2				
Others: Yes – 1 No –2				
2. Dysentery Self: Yes – 1 No – 2				
Others: Yes – 1 No --2				
3. Typhoid Self: Yes – 1 No – 2				
Others: Yes – 1 No --2				
4. Jaundice Self: Yes – 1 No – 2				
Others: Yes – 1 No --2				
5. Fever Self: Yes – 1 No – 2				
Others: Yes – 1 No –2				
6. Skin disease Self : yes-1 no-2				
Others: Yes – 1 No –2				
7. High fever and cough Self: Yes – 1 No – 2				
Others: Yes – 1 No --2				
8. Accident broken limbs Self: Yes – 1 No – 2				
Others: Yes – 1 No --2				

9. Malaria Self: Yes – 1 No – 2				
Others: Yes – 1 No --2				
10. Pneumonia Self: Yes – 1 No – 2				
Others: Yes – 1 No --2				
11. Mental illness Self: Yes – 1 No – 2				
Others: Yes – 1 No –2				
Others, specify……. Self: Yes – 1 No – 2				
Others: Yes – 1 No –2				

Health Care and Protection

2. Do you do any of the following to prevent or reduce the following health conditions?

(first 3 that you have mentioned before)

Insert 1 for Yes or 2 for No in the boxes of this table (more than one answer is acceptable), (pls. Read the list)	1. Home remedy	2.Village doctor	3. Union Health complex	4. MBBS Doctor	4. Private clinic	6. Upazila health complex	7. Homeopathy	8. Traditional healer (*kobiraj*)	9. Spiritual healer (*boidd/ohia*)	10. Religious healer	11. Health worker	12. Medicine shop keeper	13. Pray to the God (Help to the God)	14. Government district Hospital	15.Other: …… ……
1. Diarrhoea /Cholera															
2. Dysentery															
3. Typhoid															
4. Jaundice															
5. Fever															
6. Skin diseases															
7.highFever/cough															
8. Accident broken limbs															
9. Malaria															
10. Pneumonia															
11. Mental Illness															
12. For any other health condition															
12. For any other health condition															

3. What do you need to be able to adopt home treatment? (more than one answer is acceptable), (pls. Read the list)

The things you need	Indicate up to **three** where 1 = most important
1. Money	
2. Land to grow natural materials	
3. Access to natural materials (herbs) easily	
4. Knowledge of treatment	
5. Support from doctor	
6. Support from elders	
7. Support from traditional healer	
8.Belief in home based care	

4. What are the advantages of home treatment ?	Indicate up to **three** where 1 = most important
1. Saves money	
2. Saves time	
3. More effective	
4. Works quicker	
5.Does not produce side effects	
6. Easier to use	
7. Don't have to travel to local town	
8. Don't have to visit doctor	

9. Support from kinship	
10. Support from neighbours	
11. Support from mother-in-law	

9. Preserves dignity (lajja)	
10. No advantages	
11. Don't know	

5. What are the disadvantages of home treatment?

Causes	Indicate up to **three** where 1 = most important
1. Less effective	
2. Can make the patient more ill	
3. Treatment works slower	
4. Requires access to local ingredients	
5. Does not guarantee better health	
6. Doctor does not approve of this method	
7. No disadvantages	
8. Don't know	
9. No response	
10. Other:	
10. Other:	

Section VII: Monitoring Health Security

1. What do you think are the main things that show you or your family are in good health?

Characteristics of good health	Indicate up to **three** where 1 = very most important and 3 is lease important
1. Energy to work	
2. A job	
3. Access to food	
4. Income	
5. Access to education	
6. Mobility	
7. Owning land	
8. Livestock	
9. Regular clean water supply	
10. Access to health care	
11. Access to clean latrine	
12. Money	
13. Don't know	
14. No response	
15. Other:	
16. Other:	

2. Do you feel more resistant to disasters when you are healthy?

Yes	1
No	2
Don't know	3
No response	4
Others ----------	5

3 Do you, or would you be prepared to save some of your income to protect your health against the disasters you have identified?

Responses	Yes-1 No-2 Do not know-3 No response-4
1.Already save some income for this purpose	
2. Would be prepared to start to do this	
3.If we had money to save we would	

SECTION VIII: Health security and disaster

1. Think of a member of your family who has been or is currently the **unhealthiest**. Assume your area is severely affected by **flood, cyclone or drought** causing damage such as loss of crops, inundation of your house, loss of stored food, loss of shelter, unemployment or other types of problems. Is this unhealthy person affected more by the flood, cyclone or drought than the other members of the family?

	Flood /water logging / flash flood	Cyclone/ storm/ tornado	Drought no rain
Unhealthy person affected more	1	1	1
Unhealthy person affected less	2	2	2
Unhealthy person affected the same as the others	3	3	3
Don't know	4	4	4
No response	5	5	5

2. Now think of a member of your family who has been or is currently the **healthiest**. Is this person affected more by the flood, cyclone or drought than the other members of the family?

Type of affect	Flood /water logging / flash flood	Cyclone/ storm/ tornado	Drought no rain
Healthy person affected more	1	1	1
Healthy person affected less	2	2	2
Healthy person affected the same as the others	3	3	3
Don't know	4	4	4
No response	5	5	5

3. Assume that immediately after **flood,** there is an outbreak of diarrhoea in your village. Some households have members who can make **ORS** for treating diarrhoea and some households do not have any member who can make **ORS**. If children in both groups of households are attacked with diarrhoea, children from which households you think will be affected more?

1. Children from households who can make ORS will be affected more	1
2. Children from households who cannot make ORS will be affected more	2
3. Both will be equally affected	3
4. Don't know	4

5. No response	5

4. Assume that many individuals are injured from the **cyclone**. Indicate which are more affected by injuries.

1. Individuals near to the health centre	1
2. Individuals far away from the health centre	2
3. Those who access a free paramedic service	3
4. Those who pay money for a health service	4
5. People will be affected about the same amount	5
6. Don't know	6
7. No response	7

5. If there are **drought** related food shortages in your village, people may loose weight. Who do you think regains weight the fastest? (Pls. Read the list)

1. Individuals who go to the qualified healthcare provider	1
2. Individuals who go for another type of help (specify if known) ……	2
3. Don't know	3
4. No response	4
5. Others	

Any additional comments: (optional)

Appendix 12 Informed Consent Form

University headed paper

Research Title: Self-Care for health in Bangladesh

I _____ (Name)

employee of _____ (Institution)

hereby give consent to participate in PhD research examining diarrhoeal disease risk management and self-care in Bangladesh. I have received an information sheet about this research and I understand that participation is voluntary and I can withdraw at any stage. I can avoid answering any questions for any reason and without giving a reason without penalty. Should anything arise that I consider to be inappropriate I can contact the principle research supervisor whose details are provided on the information sheet.

Signed _____ (Participant)

Date _____

Appendix 13 Questions for Key Personnel

1. What is your opinion about the use of self-care as a disease management strategy?

2. What is your opinion about self-care as a disease management strategy for diarrhoeal disease?

3. Why do some people prefer to use home based treatments for ill health / diarrhoeal disease rather than seeking external medical diagnosis and treatment through formal or informal health providers?

4. What do you think of self-care practices for chronic conditions and minor ailments? Can it be used for certain types of illnesses?

5. Do you think self-care should be supported / promoted as a means of disease mitigation and response?

6. How do factors such as age, socioeconomic status, gender, religion, culture, and ethnicity affect the adoption and use of self-care practices in Bangladesh?

7. Do you think self-care adoption is a response to perceived, or actual, deficiencies in the health care system?

8. Are there any factors in health service organisation which hinder self-care practices and development?

9. What needs to be done to ensure that self-care practices are in the best interest of the individual?

10. Is there a role for better information to enable better self-care? Who could provide this information?

11. How can the health network positively affect any support for the individual engaging in self-care?

Appendix 14 Key Personnel Interview Times and Locations

ID	Date	Location	Organisation	Position
1	11.02.09	Chakaria	Private Hospital	Doctor
2	11.02.09	Chakaria	Private Hospital	Doctor
3	12.02.09	Chakaria	Private Hospital	Doctor
4	13.02.09	Chakaria	Government Hospital	Doctor
5	14.02.09	Chakaria	Private Practice	Doctor
6	19.02.09	Chakaria	Government Hospital	Doctor
7	19.02.09	Chakaria	NGO	Programme Officer
8	20.02.09	Chakaria	NGO	Programme Officer
9	20.02.09	Chakaria	NGO	Programme Officer
10	23.02.09	Dhaka	NGO	Doctor/Researcher
11	23.02.09	Dhaka	NGO	Doctor
12	25.02.09	Dhaka	NGO	Policy Manager
13	26.02.09	Dhaka	NGO	Programme Manager
14	28.02.09	Dhaka	NGO	Policy Officer
15	02.03.09	Domar	NGO	Doctor
16	02.03.09	Domar	NGO	Programme Manager
17	02.03.09	Domar	Private Practice	Doctor
18	03.03.09	Domar	Private Practice	Doctor
19	04.03.09	Domar	Private Practice	Doctor
20	04.03.09	Domar	Government Hospital	Doctor

Appendix 15 Ethics Consideration Form

Ethics Consideration in Research

This form should be completed by the Principal Investigator (staff/student) undertaking a research project. Submission is as follows:

undergraduate and postgraduate students: submit to supervisor;
student supervisors: pass on to Divisional Ethics Committee representative;
members of staff: submit to Divisional Ethics Committee representative.

It is a 'checklist' intended *to "promote awareness of ethical principles and ethical issues in the conduct of **all** research and consultancy activities"* in line with Northumbria University policy – please refer to this policy before completing the form:
http://northumbria.ac.uk/static/5007/section6.pdf

The aim of the form is also to identify whether ethics approval needs to be requested at School or University Committee levels or through external processes, eg. NHS REC, AQREC.

Section A
Project Title: **Self care for health in rural Bangladesh**
. . . . . .
. . . . . .
Name of researcher: Ross Edgeworth . . . . . Date: .05/2007 . . . . . .
Staff / undergraduate student / **postgraduate student** (please circle)
Name of supervisor (if applicable): Dr. Andrew Collins. . . . . .
Project funded by (if applicable): Northumbria University. . . . . .
Name of Divisional Ethics Committee representative: John Dean . . . . . .
please complete Section B

Section C

to be completed by Supervisor/Divisional representative:

This research is a repetition of a project previously approved no / yes: year approved =

Requires consideration at School Ethics Committee no / yes

to be completed by Chair of School Ethics Committee (if applicable):

Requires consideration at University Ethics Committee no / yes

Requires external committee consideration no / yes

Section B
Please complete: **all material submitted will be treated confidentially.**

NB. Ethical issues often arise during the process of conducting research/'in the field'. This form is intended to encourage you to consider what ethical concerns may be encountered, and how you can address them – while recognizing that this can never be a definitive list. Rather, by completing this form, you should be better able to deal with unforeseen issues if/as they arise.

Ethical domain	**Applies to this project** **(yes/no)**	**Outline steps taken to address ethical issues (where relevant)**
Personal issues regarding the research process: relationships with co-researchers/ supervisor/supervisee/ colleagues/fellow students/technicians etc.	**YES**	The research for this PhD will take place within a wider research programme on Health Security in Bangladesh. Therefore any work conducted for this PhD will adhere to ethical principles and conditions established by the project donor (ESRC) and the local partner institution (ICDDR, B). The research will also abide by the Northumbria University ethical standards policy. This will include adhering to the principles of beneficence and non-malfeasance, respect for the rights of others and justice. The research will be conducted in three field site locations in rural Bangladesh over two years. An initial visit is scheduled for September 2007 with the second phase of field research commencing in May 2008. The ethical considerations outlined within will be applied and adhered to throughout both field visits. All field research will take place in close coordination with local institutions in the study areas with which understandings for work in this subject area are already established. Sensitivity will be employed throughout the research process regarding the nature of many issues to be addressed by both quantitative and qualitative approaches. Regular communication will take place with staff from local institutions in addition to communication with personal contacts of the researcher living in Bangladesh to assess any security risks that may arise prior to arrival in Bangladesh. This will continue during the field research itself. The researcher will have a mobile phone capable of making national and international calls if required. Although access to email may be limited at some of the field sites use of the internet will also be important in terms of reporting to other DDC staff to avoid concerns over the location and safety of the researcher. In the case of limited email access telephone communications will be utilized.

		All personal health and safety matters will be taken into consideration prior to departure to Bangladesh. This will also be assessed on a regular basis while in country.
Concerns regarding social research: 'positionality' issues involving gender, ethnicity, age, disability, sexuality, etc. – vulnerability of *participant or researcher*	**YES**	All research will observe the norms of social science rigour by paying due attention to issues of positionality, representation and participants rights. All participants will be treated fairly and with respect. Implications to be taken into consideration concern the conduct and potential outcome of research upon existing socio-economic and gender dynamics. Vulnerable groups in the targeted research sites are predominantly female in an already highly patriarchal society. Therefore particular attention and consideration will be taken when engaging with female participants. The close coordination with local institutions and use of in-country staff will be paramount in approaching research with this particular group in a culturally sensitive and appropriate manner. It is anticipated that some interviews or conversations with female respondents will take place in the company of other family members, particularly in light of researcher – respondent gender differences. Research conducted with vulnerable and marginalised groups can create greater community awareness of these particular groups. If the research is not conducted in the correct manner these groups could be regarded as the 'source' of the problem resulting in stigmatisation and further marginalisation. Explanations outlining the intent of the research will be kept at a generic level in addition to close coordination with local institutions and use of in-country staff in order to minimise the likelihood of this potential scenario. Power dynamics and the hierarchical nature of some rural communities must also be taken into consideration. Therefore efforts will be made to inform local community leaders about the research and engage them in the research process. Again close coordination with local institutions and use of in-country staff will be of vital importance in successfully achieving this goal.
Consent: gaining informed consent; use of covert research; opportunity for participants to comment on analysis/outcomes	**YES**	The research will endeavour to ensure participants are always able to give 'informed consent'. Given the likelihood of high levels of illiteracy amongst the target research population a process of verbally recorded consent will be required. In the event of potential respondents objecting to the use of tape recordings a written consent form will be read to prospective

		participants in the presence of a witness. Clarifications concerning the consent process will be given if required. Participation will only take place if the researcher is confident that the potential participant has fully understood the contents of the consent form and that they are aware that they have no obligation to participate in the research. If these criteria have been met the participant will then be included in the research. In research 'activities' such as interviews, focus groups, participatory approaches, observations and survey data collection, an explanation of the research will be given to participants prior to commencing the research activity. At this juncture participants will also be given an opportunity to withdraw from participation. Participants will also be able to refuse the use of information gathering devices such as tape-recorders, if they are used in the research process. Additionally participants will be informed that they are able to withdraw their consent at any point. Wherever possible copies of the scripts and summaries will be summarised verbally to participants (due to potential illiteracy and translation of language), for their information and verification. This process will also provide an opportunity for participants to withdraw their comments and for the researcher to request permission to use the participant's responses in future documentation. For some observational studies, explanation of full work prior to observations may result in modification of behaviour. Observational studies in public places, will only inform those who request an explanation of the researchers presence. A generic explanation of the research will be provided in these situations in order to limit the impact on participants' future behaviour and actions. For observational studies in the home, participants will be given an overview prior to research work and a full explanation at the end of the observation period, at which point they will also be given the opportunity to withdraw their information. Participants will be asked for permission to include direct quotes in any documents. When visiting participants homes, efforts will be made to not make the purpose of the visit public to anyone other than the participant. All attempts will be made to allow participants to express their opinions in a setting where they are comfortable and feel at ease to express their opinions freely. In the event of key personnel interviews a more detailed description of the research purpose will be provided and a written informed consent form will be signed by respondents if they consent to their participation. Key informants will also be given the opportunity to withdraw

		from the interview at any point and permission will be asked to include any direct quotes in any documents resulting from the research.
Data storage and reporting: issues involving confidentiality and anonymity; place/ length of storage; sensitivity to commercial/ personal/political issues regarding dissemination	**YES**	There are no experimental or laboratory ethical implications of this research, but there are general ethical considerations concerning the handling of information provided by participants. All information will therefore remain anonymous and all research conduct carried out with due consideration of its potential impact on the participants. Anonymity of participants' identity will be maintained at all times with individuals assigned code numbers. Research data will be collected and stored by the researcher. All handwritten information will be transferred to electronic storage under password protection, only accessible by the researcher. Original copies of data will then be destroyed. Electronic data will be stored for up to 18 months after completion of the PhD process if required for use in any documents resulting from the research process, and then deleted. Confidentiality of the data will be maintained at all times throughout the research and analysis periods.
Environmental impacts: impacts of transport, damage to habitats, pollution, collection of samples, use and disposal of chemicals and/or GM organisms, etc.	**NO**	
Principle of non-malfeasance - or "do no harm": issues around raising expectations among participants, the emotional well-being of subjects, over-researching.	**YES**	The research will be conscious of generating false expectations, particularly in terms of providing any immediate health or health service benefits to respondents. In order to avoid this situation a full explanation of potential long term implications and outcomes of the research will be necessary. It will be important to highlight immediate improvements and benefits in the near future are an unlikely outcome of this research. Health problems and various diseases often carry 'taboo' status within many communities in Bangladesh and are therefore topics which people seldom discuss easily within their own families. Careful consideration of this context will be taken into account throughout the research process in order to respond to participants' willingness to engage with the subject matter under investigation. The close coordination with local institutions and use of in-country staff will be a key factor in addressing this issue. Creating an environment in which the participant feels comfortable to disseminate information and comfortable to refuse to give information

		or withdraw from the research process all together will also be vital to ensuring the principle of non-malfeasance is maintained.
Human tissue use: research involving blood and its products, DNA and other human materials and products – issues concerned with consent, use of results, etc.	**NO**	
Research on non-human organisms and their products: non-environmental concerns such as animal well-being, stress to researcher, use of GM technologies, etc.	**NO**	

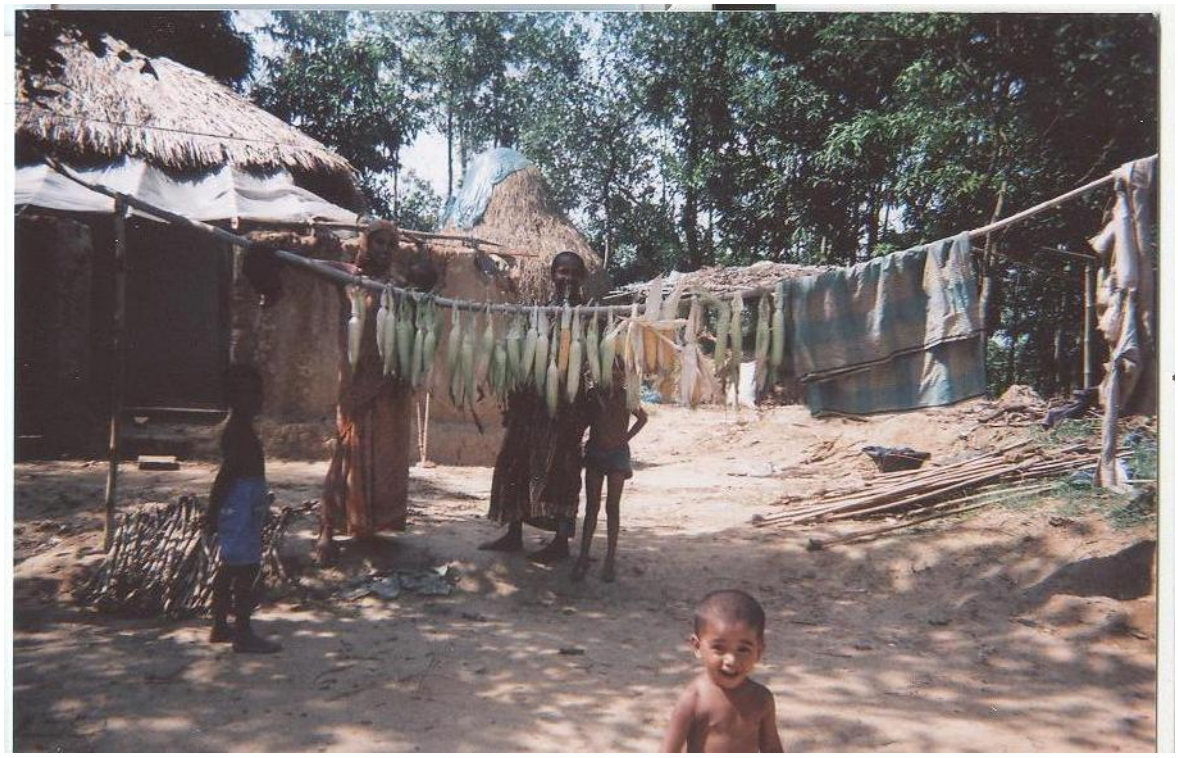
Signature of researcher: . . . . . .

Signature of Supervisor (if researcher is a student) . . . . . .

Signature of Divisional Ethics Committee representative: . . . . . .

please submit to relevant individual - who should also sign above then complete Section C

Appendix 16 Examples of Photo Diaries



Source: Male PRA Participant Chakaria

Source: Female PRA Participant Chakaria

Source: Female PRA participant Domar

Source: Male PRA Participant Chakaria

Source: male PRA participant Domar

Source: Female PRA participant Chakaria